Access DB# 96472

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Laura Weiner Examiner #: 71724 Date: 6-12-03
Art Unit: 1745 Phone Number 308-4396 Serial Number: 09/634,541
Mail Box and Bldg/Room Location: KETO Results Format Preferred (circle): PAPER/DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: See First Page

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Could you search for a Composition Comprising
b) a polymeric material Comprising a polymer or Copolymer which has as part of polymer chain reactive Groups which are Capable of Crosslinking reactions under the action of heat and/or UV radiation &
Compounds IIa or IIb or IIc. The Composition Can be for an anode (neg electrode), Cathode (positive electrode), electrolyte, a Separator, see Cl 25
Please Send back copy of claims.
Thanks, Laura

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: K. Fuller	NA Sequence (#)		STN	✓ 405
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)		Questel/Orbit	
Date Searcher Picked Up:	Bibliographic	✓	Dr.Link	
Date Completed: 6/11/03	Litigation		Lexis/Nexis	
Searcher Prep & Review Time: 30	Fulltext		Sequence Systems	
Clerical Prep Time:	Patent Family		WWW/Internet	
Online Time: 55	Other		Other (specify)	

PTO-1590 (8-01)

STIC Search Report
EIC 1700

STIC Database Tracking Number: 96472

TO: Laura Weiner
Location: CP3 8E10
Art Unit : 1745
June 12, 2003

Case Serial Number: 09/674541

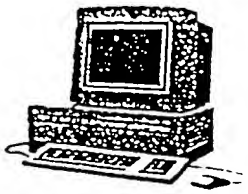
From: Kathleen Fuller
Location: EIC 1700
CP3/4 3D62
Phone: 308-4290

Kathleen.Fuller@uspto.gov

Search Notes

EIC1700

Search Results Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search *or contact*:

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* [ ] *Example:* [1713]
- *Relevant prior art found, search results used as follows:*
  - [ ] 102 rejection
  - [ ] 103 rejection
  - [ ] Cited as being of interest.
  - [ ] Helped examiner better understand the invention.
  - [ ] Helped examiner better understand the state of the art in their technology.

  Types of relevant prior art found:
  - [ ] Foreign Patent(s)
  - [ ] Non-Patent Literature
    (journal articles, conference proceedings, new product announcements etc.)
- *Relevant prior art **not found**:*
  - [ ] Results verified the lack of relevant prior art (helped determine patentability).
  - [ ] Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Drop off completed forms in **CP3/4 - 3D62**.

=> FILE REG
FILE 'REGISTRY' ENTERED AT 16:00:53 ON 12 JUN 2003

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 11 JUN 2003 HIGHEST RN 529474-19-9
DICTIONARY FILE UPDATES: 11 JUN 2003 HIGHEST RN 529474-19-9

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> FILE HCAPLU
FILE 'HCAPLUS' ENTERED AT 16:00:58 ON 12 JUN 2003

FILE COVERS 1907 - 12 Jun 2003 VOL 138 ISS 24
FILE LAST UPDATED: 11 Jun 2003 (20030611/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE L68
L43 50 SEA FILE=REGISTRY ABB=ON (11098-99-0/BI OR 11113-67-0/BI OR 11126-15-1/BI OR 12017-97-9/BI OR 12022-46-7/BI OR 12031-65-1/BI OR 12190-79-3/BI OR 12680-08-9/BI OR 131344-56-4/BI OR 1314-13-2/BI OR 1314-35-8/BI OR 1314-62-1/BI OR 1332-29-2/BI OR 13463-67-7/BI OR 13983-17-0/BI OR 146509-31-1/BI OR 152991-98-5/BI OR 153327-00-5/BI OR 159967-11-0/BI OR 177997-13-6/BI OR 178961-04-1/BI OR 182442-95-1/BI OR 24937-79-9/BI OR 249756-67-0/BI OR 249756-68-1/BI OR 249756-69-2/BI OR 249756-70-5/BI OR 3486-35-9/BI OR 37296-91-6/BI OR 37349-20-5/BI OR

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                37367-96-7/BI OR 39302-37-9/BI OR 39457-42-6/BI OR 51177-06-1/B
                I OR 51680-57-0/BI OR 56321-19-8/BI OR 61673-68-5/BI OR
                61673-71-0/BI OR 67542-73-8/BI OR 71043-01-1/BI OR 74245-06-0/B
                I OR 7439-93-2/BI OR 76214-28-3/BI OR 7782-42-5/BI OR 80341-49-
                7/BI OR 9002-84-0/BI OR 9002-88-4/BI OR 9003-07-0/BI OR
                9003-53-6/BI OR 96352-80-6/BI)
L44          39 SEA FILE=REGISTRY ABB=ON  L43 AND 1-10/M
L45          11 SEA FILE=REGISTRY ABB=ON  L43 NOT L44
L46           7 SEA FILE=REGISTRY ABB=ON  L45 AND PMS/CI
L47           4 SEA FILE=REGISTRY ABB=ON  L45 NOT L46
L48          43 SEA FILE=REGISTRY ABB=ON  L44 OR L47
L49       23100 SEA FILE=REGISTRY ABB=ON  (LI(L)(CO OR NI OR AL OR MO OR V OR
                W OR RU OR FE OR CR OR TA OR NB OR TI OR ZR)(L)(O OR S))/ELS
L50      383189 SEA FILE=HCAPLUS ABB=ON  L48 OR L49
L57      553536 SEA FILE=HCAPLUS ABB=ON  L50 OR (OXIDE# OR ?SILICAT? OR
                ?SULFATE? OR ?CARBONATE? OR ?PHOSPHATE? OR ?NITRIDE?  OR
                ?AMIDE? OR ?IMIDE? OR ?CARBIDE?)(3A)METAL?
L58       26901 SEA FILE=HCAPLUS ABB=ON  L57 AND CELL#
L59         622 SEA FILE=HCAPLUS ABB=ON  L58 AND PARTIC?(3A)SIZE?
L60           5 SEA FILE=HCAPLUS ABB=ON  L59 AND ?POLYMER?(4A)(HEAT? OR IRRAD?
                OR RADIAT? OR UV OR ULTRAVIOLET OR ULTRA(W)VIOLET? OR PHOTOCHEM
                ? OR LIGHT?(3A)CUR?)
L61          22 SEA FILE=HCAPLUS ABB=ON  L59 AND ?POLYMER? AND COMPOSITION?
L62           5 SEA FILE=HCAPLUS ABB=ON  L59 AND (?POLYMER?(5A)CROSSLINK?)
L63          27 SEA FILE=HCAPLUS ABB=ON  (L60 OR L61 OR L62)
L68          21 SEA FILE=HCAPLUS ABB=ON  L63 AND (PLASTIC? OR ELECTROCHEM?)/SC,
                SX
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=> D L68 ALL 1-21 HITSTR

L68  ANSWER 1 OF 21  HCAPLUS  COPYRIGHT 2003 ACS
AN   2001:421072  HCAPLUS
DN   135:23542
TI   Manufacture of lightweight inorganic moldings using styrene-type resin
     cellular particles
IN   Yamada, Naoaki; Osugi, Kumiko; Kumagaya, Tatsuo; Fujisato, Shunji
PA   Kanegafuchi Chemical Industry Co., Ltd., Japan
SO   Jpn. Kokai Tokkyo Koho, 8 pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
IC   ICM  C04B038-06
     ICS  B28B003-20; C04B028-02; C04B040-02; C04B014-04; C04B016-02;
          C04B016-06; C04B016-08; C04B014-02; C04B024-38; C04B103-44;
          C04B111-40
CC   58-1 (Cement, Concrete, and Related Building Materials)
     Section cross-reference(s): 38
FAN.CNT 1
     PATENT NO.          KIND  DATE          APPLICATION NO.  DATE
     ---------------     ----  --------      ---------------  --------
PI   JP 2001158675       A2    20010612      JP 1999-340235   19991130
PRAI JP 1999-340235            19991130
AB   The process involves mixing (A) compns. contg. inorg. hydraulic materials,
     aggregates, styrene-type resin cellular particles which do not expand
     anymore as lightwt. aggregates, fibrous materials, admixts., etc. with (B)
     water, molding, and heating and curing at a temp. higher than the m.p. of
     the styrene-type resin cellular particles to form cells in the
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moldings. Preferably, the compns. contain 20-50% Al oxides with mean **particle size** 50-300 .mu.m, bulk sp. gr. 0.1-0.7, and strength under pressure .gtoreq.8 MPa. The moldings have smooth surfaces, are asbestos-free and yet have good mech. properties.

ST styrene resin cellular particle cement **compn**; lightwt cement molding cellular asbestos free

IT Sand
RL: MOA (Modifier or additive use); USES (Uses)
(aggregates; manuf. of lightwt. cellular cement-based moldings using styrene-type resin cellular particles)

IT Cellulose pulp
Cement (construction material)
(manuf. of lightwt. cellular cement-based moldings using styrene-type resin cellular particles)

IT Polypropene fibers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(manuf. of lightwt. cellular cement-based moldings using styrene-type resin cellular particles)

IT 1309-48-4, Magnesia, uses
RL: MOA (Modifier or additive use); USES (Uses)
(admixts. contg.; manuf. of lightwt. cellular cement-based moldings using styrene-type resin cellular particles)

IT 25085-53-4, Isotactic polypropylene
RL: MOA (Modifier or additive use); USES (Uses)
(fibers; manuf. of lightwt. cellular cement-based moldings using styrene-type resin cellular particles)

IT 1344-28-1, Alumina, uses
RL: MOA (Modifier or additive use); USES (Uses)
(lightwt. aggregates contg.; manuf. of lightwt. cellular cement-based moldings using styrene-type resin cellular particles)

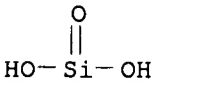
IT **13983-17-0**, Wollastonite
RL: MOA (Modifier or additive use); USES (Uses)
(manuf. of lightwt. cellular cement-based moldings using styrene-type resin cellular particles)

IT 100-42-5D, Styrene, **polymers**
RL: NUU (Other use, unclassified); USES (Uses)
(manuf. of lightwt. cellular cement-based moldings using styrene-type resin cellular particles)

IT **13983-17-0**, Wollastonite
RL: MOA (Modifier or additive use); USES (Uses)
(manuf. of lightwt. cellular cement-based moldings using styrene-type resin cellular particles)

RN 13983-17-0 HCAPLUS

CN Wollastonite (Ca(SiO3)) (9CI) (CA INDEX NAME)



L68 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:336743 HCAPLUS

DN 134:355440
TI Fuel-**cell** separator containing polythiophenylene, conductive plate, and its manufacture
IN Sakamoto, Arata; Okazaki, Hiroyuki; Tajiri, Hiroyuki; Nakagawa, Yoshiteru
PA Osaka Gas Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01M008-02
ICS C01B031-04; C08K003-04; C08L081-02; H01B001-04
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001126744	A2	20010511	JP 1999-306852	19991028
PRAI JP 1999-306852		19991028		

AB The separator consists of graphite particles contg. course grains having av. **particle size** (D50%) 40-120 .mu.m and a nonfired thermoplastic resin, e.g., polyphenylene sulfide-type resin. Also claimed is a conductive plate consisting of conductive particles contg. 40-100 wt.% course grains having av. **particle size** (D50%) 40-120 .mu.m and 0-60 wt.% fine grains and the thermoplastic resin at wt. ratio of the conductive particles and the resin 95/5 to 75/25. The separator is manufd. by forming a **compn**. contg., the graphite particles and the resin. The separator, esp. suitable for **polymer** -electrolyte fuel **cells**, has high thermal cond., elec. cond., strength, and dimensional accuracy and is obtained without carbonizing process.

ST fuel **cell** separator graphite polyphenylene sulfide
IT Electric conductors
Fuel **cell** separators
(fuel-**cell** separator contg. graphite course grains and polythiophenylene)
IT Polythiophenylenes
RL: DEV (Device component use); USES (Uses)
(fuel-**cell** separator contg. graphite course grains and polythiophenylene)
IT **7782-42-5**, Graphite, uses
RL: DEV (Device component use); USES (Uses)
(SNE 10G; fuel-**cell** separator contg. graphite course grains and polythiophenylene)
IT 25212-74-2, Poly(thio-1,4-phenylene) 337364-52-0, Tohpren LC 5G
RL: DEV (Device component use); USES (Uses)
(fuel-**cell** separator contg. graphite course grains and polythiophenylene)
IT **7782-42-5**, Graphite, uses
RL: DEV (Device component use); USES (Uses)
(SNE 10G; fuel-**cell** separator contg. graphite course grains and polythiophenylene)
RN 7782-42-5 HCAPLUS
CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

L68 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:817412 HCAPLUS
DN 133:365421
TI Manufacture of carbon-graphite composite molded body having high strength and electric conductivity
IN Kawamata, Hiroshi; Takahashi, Kunimasa
PA Mitsubishi Chemical Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C04B035-52
ICS H01M008-02
CC 57-8 (Ceramics)
Section cross-reference(s): **52**, 76
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2000319067	A2	20001121	JP 1999-124070	19990430
PRAI JP 1999-124070		19990430		

AB The process comprises: forming a **compn.** consisting of graphite fine **particles** (**size** 10-70 .mu.m) and a C compd. fine **particles** (av. **size** .ltoreq.10 .mu.m) which is self-sinterable during carbonization, dehydration-drying, mixing, granulating to max. **particle size** .ltoreq.0.5 mm, molding, precision-machining, and carbonizing under non-oxidizing atm. The molded body is esp. suitable for solid **polymer** mold and phosphat-type fuel **cell** separator plate.
ST carbon graphite composite solid **polymer** mold; fuel **cell** separator plate composite
IT Sugarcane
(binder; for manuf. of carbon-graphite composite molded body having high strength and elec. cond.)
IT Polyoxyalkylenes, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(binder; for manuf. of carbon-graphite composite molded body having high strength and elec. cond.)
IT Composites
(manuf. of carbon-graphite composite molded body having high strength and elec. cond.)
IT Fuel **cell** separators
(manuf. of carbon-graphite composite molded body having high strength and elec. cond. for)
IT Molds (forms)
(solid **polymer** mold; manuf. of carbon-graphite composite molded body having high strength and elec. cond. for)
IT 9004-67-5, Methyl cellulose 25322-68-3, Polyethylene glycol
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(binder; for manuf. of carbon-graphite composite molded body having high strength and elec. cond.)
IT 7440-44-0, Carbon, processes **7782-42-5**, Graphite, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of carbon-graphite composite molded body having high strength

and elec. cond.)
IT 25791-96-2, GP 3000
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(raw material contg.; for manuf. of carbon-graphite composite molded body having high strength and elec. cond.)
IT **7782-42-5**, Graphite, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of carbon-graphite composite molded body having high strength and elec. cond.)
RN 7782-42-5 HCAPLUS
CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

L68 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:408765 HCAPLUS
DN 133:32737
TI Electrically conductive porous carbon sheets, their manufacture, and solid **polymer** fuel **cells** comprising the sheets
IN Nanba, Yoichi; Mashiko, Tsutomu
PA Showa Denko K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C04B038-00
ICS H01M008-02; H01M008-10
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 57, 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000169253	A2	20000620	JP 1998-351179	19981210
PRAI	JP 1998-351179		19981210		

AB The sheets comprises carbon powder (av. **particle size** 5-30 .mu.m) 65-90, binder 5-20, and pulp 5-20 wt.% and have thickness 0.05-2 mm, bulk d. 0.8-1.3 g/cm3, pore diam. 1-20 .mu.m, vol. sp. resistivity <0.2 .OMEGA.-cm, and gas permeability 0.001-10 cm3/cm2/min/mmAq. The sheets are manufd. from a mixt. having the above stated **compn.**, by paper-making process followed by firing at 150-400.degree. under application of .ltoreq.5kg/cm2 pressure. Solid **polymer** fuel **cells** using the sheets as moisture controllers are also claimed.
ST moisture controlling carbon sheet fuel **cell**; carbon elec conducting porous sheet manuf; pulp binder carbon powder fired sheet
IT Phenolic resins, uses
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(Bellpearl, binder; manuf. of elec. conductive porous carbon sheets for fuel **cell** moisture controllers)
IT Vinal fibers

RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(binders; manuf. of elec. conductive porous carbon sheets for fuel **cell** moisture controllers)

IT Films
Films
(elec. conductive, porous; manuf. of elec. conductive porous carbon sheets for fuel **cell** moisture controllers)

IT Porous materials
(films, elec. conductors; manuf. of elec. conductive porous carbon sheets for fuel **cell** moisture controllers)

IT Electric conductors
Electric conductors
(films, porous; manuf. of elec. conductive porous carbon sheets for fuel **cell** moisture controllers)

IT Cellulose pulp
(manuf. of elec. conductive porous carbon sheets for fuel **cell** moisture controllers)

IT Fuel **cells**
(moisture controller; manuf. of elec. conductive porous carbon sheets for fuel **cell** moisture controllers)

IT Films
(porous, elec. conductors; manuf. of elec. conductive porous carbon sheets for fuel **cell** moisture controllers)

IT 9002-85-1, Poly(vinylidene chloride) 25014-41-9, Polyacrylonitrile
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(binder; manuf. of elec. conductive porous carbon sheets for fuel **cell** moisture controllers)

IT 7440-44-0, Carbon, uses **7782-42-5**, Graphite, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of elec. conductive porous carbon sheets for fuel **cell** moisture controllers)

IT **7782-42-5**, Graphite, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of elec. conductive porous carbon sheets for fuel **cell** moisture controllers)

RN 7782-42-5 HCAPLUS
CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

L68 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:364597 HCAPLUS
DN 133:93187
TI Electrochemical characterization of superfine spinel LiMn2O4 synthesized by microwave-**polymer** network method
AU Yang, Shu-Ting; Zhang, Yan-Feng; Lu, Qing-Zhang; Yin, Yan-Hong; Zhang, Ming-Chun; Ding, Li; Zhao, Lin-Zhi
CS College of Chemistry and Environmental Science, Henan Normal University, Xinxiang, 453002, Peop. Rep. China

SO Wuji Cailiao Xuebao (2000), 15(2), 309-314
CODEN: WCXUET; ISSN: 1000-324X
PB Kexue Chubanshe
DT Journal
LA Chinese
CC 57-2 (Ceramics)
Section cross-reference(s): **72**
AB Superfine spinel LiMn2O4 powders were synthesized with a gelation precursor by microwave-**polymer** network process. The gelation precursor was obtained by mixing Li2CO3, Mn(NO3) and polyacrylamide. Electrochem. tests show that the initial specific capacity is 120 mAh/g, and the degrdn. rate of specific capacity is only 4.7% after 50 cycles. SEM and XRD results prove that the microwave-**polymer** network process can increase the purity of the phase, reduce the **particle size** of spinel LiMn2O4, and provide more active sites for Li+ intercalation. The microwave-**polymer** network process is a new method not only for synthesizing cathode material of Li ion **cells**, but also for synthesizing other advanced oxide ceramic materials.
ST electrochem characterization superfine spinel lithium manganese oxide; microwave **polymer** network synthesis lithium manganese oxide
IT Cathodes
Ceramics
Electric properties
Microstructure
Microwave
Particle size
Phase **composition**
(electrochem. characterization of superfine spinel LiMn2O4 synthesized by microwave-**polymer** network method)
IT 1302-67-6P, Spinel **39457-42-6P**, Lithium manganese oxide
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(electrochem. characterization of superfine spinel LiMn2O4 synthesized by microwave-**polymer** network method)
IT 554-13-2, Lithium carbonate 9003-05-8, Polyacrylamide. 10377-66-9, Manganese nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(electrochem. characterization of superfine spinel LiMn2O4 synthesized by microwave-**polymer** network method)
IT **39457-42-6P**, Lithium manganese oxide
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(electrochem. characterization of superfine spinel LiMn2O4 synthesized by microwave-**polymer** network method)
RN 39457-42-6 HCAPLUS
CN Lithium manganese oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Mn	x	7439-96-5
Li	x	7439-93-2

L68 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:723301 HCAPLUS
DN 131:312497
TI Method for producing an electrode containing electrolyte-absorbed polymer particles

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

IN Urry, Lewis F.
PA Eveready Battery Co., Inc., USA
SO PCT Int. Appl., 18 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM H01M004-06
ICS H01M004-62; H01M006-06; H01M006-22
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): **38**

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9957771	A1	19991111	WO 1999-US9429	19990429
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6280877	B1	20010828	US 1998-71521	19980501
AU 9936724	A1	19991123	AU 1999-36724	19990429
EP 1078405	A1	20010228	EP 1999-918921	19990429
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
US 2001003025	A1	20010607	US 2001-766276	20010119
PRAI US 1998-71521	A	19980501		
WO 1999-US9429	W	19990429		

AB An electrode for a galvanic **cell** is provided, comprising a particulate electrochem. active material, an electrolyte, and **crosslinked** electrolyte-absorbed **polymer** particles wherein the electrolyte-absorbed polymer particles are at least 1000 .mu.m in length, width or height and are distributed throughout the electrode. Also provided is a method for producing an electrode for a galvanic **cell**, comprising mixing a particulate electrochem. active material, an electrolyte, and dehydrated liq. absorbing **crosslinked polymer particles** which are **sized** to flow through a 20 Tyler mesh screen and be retained on a 200 Tyler mesh screen, such that, after absorbing the electrolyte, at least 50% of the liq. absorbing **crosslinked polymer** particles are at least 1000 .mu.m in length, width or height and are substantially distributed throughout the electrode. The electrode is particularly suitable as a gelled anode for alk. batteries, esp. alk. zinc-manganese dioxide **cell**.

ST battery anode electrolyte absorbed polymer particle; zinc manganese dioxide battery gelled anode

IT Vinyl compounds, uses
RL: DEV (Device component use); USES (Uses)
(carboxy-contg., **polymers**, **crosslinked**; method for producing electrode contg. electrolyte-absorbed polymer particles)

IT Acrylic **polymers**, uses
RL: DEV (Device component use); USES (Uses)
(**crosslinked**; method for producing electrode contg. electrolyte-absorbed polymer particles)

IT Battery anodes

(method for producing electrode contg. electrolyte-absorbed polymer particles)
IT 9003-01-4, Polyacrylic acid 9003-05-8, Acrylamide **polymers**
RL: DEV (Device component use); USES (Uses)
(**crosslinked**; method for producing electrode contg. electrolyte-absorbed polymer particles)
IT **1314-13-2**, Zinc oxide, uses
RL: DEV (Device component use); USES (Uses)
(electrolyte contg.; method for producing electrode contg. electrolyte-absorbed polymer particles)
IT 1310-58-3, Potassium hydroxide, uses
RL: DEV (Device component use); USES (Uses)
(electrolyte; method for producing electrode contg. electrolyte-absorbed polymer particles)
IT 7440-66-6, Zinc, uses
RL: DEV (Device component use); USES (Uses)
(method for producing electrode contg. electrolyte-absorbed polymer particles)
IT 55326-87-9, Indium hydroxide
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(method for producing electrode contg. electrolyte-absorbed polymer particles)
IT 76050-42-5, Carbopol 940
RL: TEM (Technical or engineered material use); USES (Uses)
(method for producing electrode contg. electrolyte-absorbed polymer particles)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Eveready Battery Inc; WO 9910944 A 1999 HCAPLUS
(2) Kerg, C; US 4260669 A 1981 HCAPLUS
(3) Kojima, Y; US 5587254 A 1996 HCAPLUS
(4) Matsushita Electric Ind Co Ltd; EP 0414990 A 1991 HCAPLUS
(5) Matsushita Electric Ind Co Ltd; JP 07065818 A 1995 HCAPLUS
(6) Matsushita Electric Ind Co Ltd; JP 08138656 A 1996 HCAPLUS
(7) Tucholski, G; US 3884721 A 1975 HCAPLUS
IT **1314-13-2**, Zinc oxide, uses
RL: DEV (Device component use); USES (Uses)
(electrolyte contg.; method for producing electrode contg. electrolyte-absorbed polymer particles)
RN 1314-13-2 HCAPLUS
CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O=Zn

applicants

L68 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:723073 HCAPLUS
DN 131:338050
TI **Compositions** suitable for electrochemical **cells**
IN Mohwald, Helmut; Dotter, Gerhard; Blum, Rainer; Keller, Peter; Bauer, Stephan; Bronstert, Bernd
PA BASF Aktiengesellschaft, Germany
SO PCT Int. Appl., 77 pp.
CODEN: PIXXD2
DT Patent

LA German
IC ICM C08F008-00
ICS H01M010-40
CC 38-3 (**Plastics** Fabrication and Uses)
Section cross-reference(s): 42, **72**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9957161	A1	19991111	WO 1999-EP3028	19990504
	W: AL, AU, BG, BR, BY, CA, CN, CZ, GE, HU, ID, IL, IN, JP, KR, KZ, LT, LV, MK, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TR, UA, US, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	DE 19819752	A1	19991111	DE 1998-19819752	19980504
	CA 2331040	AA	19991111	CA 1999-2331040	19990504
	AU 9938269	A1	19991123	AU 1999-38269	19990504
	EP 1088007	A1	20010404	EP 1999-920845	19990504
	EP 1088007	B1	20030226		
	R: DE, ES, FR, GB, IT				
	TW 478188	B	20020301	TW 1999-88107245	19990504
	JP 2002513986	T2	20020514	JP 2000-547129	19990504
PRAI	DE 1998-19819752	A	19980504		
	WO 1999-EP3028	W	19990504		

AB The title compns., which do not require inert gases for processing and are useful as electrodes, solid electrolytes, separators, etc., contain 1-99% pigments (primary **particle size** 5 nm-100 .mu.m) and 99-1% **polymers** (1-100% **polymers** bearing groups **crosslinkable** by **heat** and/or **UV**; 99-0% **polymers** free from such reactive groups). A mixt. of hydrophobized wollastonite 20, Me2CO 15, C3F6-CH2:CF2 **copolymer** (Kynarflex 2801) 6 and 300:480:120:100 dihydrodicyclopentadienyl acrylate-2-ethylhexyl acrylate-glycidyl methacrylate-lauryl acrylate **copolymer** 4.6 in xylene 34, and tris(2-ethylhexyl) phosphate 2.8 g was coated (30 .mu.m dry basis) on a solid support at 60.degree., dried, and cured photochem. to give a solid electrolyte useful with LiCoO2 cathodes and graphite anodes.

ST electrochem **cell** composite material; electrolyte solid composite material; pigment composite electrochem **cell**; wollastonite composite electrolyte solid; **fluoropolymer** composite electrolyte solid; acrylic **polymer** solid electrolyte; glycidyl methacrylate **copolymer** electrolyte solid

IT Anodes
Capacitors
Cathodes
Electrochemical **cells**
Pigments, nonbiological
Solid electrolytes
(compns. suitable for electrochem. **cells**)

IT **Fluoropolymers**, uses
Polyamides, uses
Polyimides, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(compns. suitable for electrochem. **cells**)

IT Alkali metal compounds
Alkaline earth compounds
Carbides

Carbon black, uses
Carbon fibers, uses
Carbonates, uses
Group IIIA element compounds
Group IVA element compounds
Group IVB element compounds
Nitrides
Oxides (inorganic), uses
Phosphates, uses
Silicates, uses
Sulfates, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(compns. suitable for electrochem. **cells**)

IT Sensors
(electrochem.; compns. suitable for electrochem. **cells**)

IT Fluoro rubber
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(hexafluoropropene-vinylidene fluoride; compns. suitable for electrochem. **cells**)

IT Electrolytic **cells**
(membrane; compns. suitable for electrochem. **cells**)

IT **Amides**, uses
Imides
RL: TEM (Technical or engineered material use); USES (Uses)
(**metal**; compns. suitable for electrochem. **cells**)

IT Lithium alloy, base
RL: TEM (Technical or engineered material use); USES (Uses)
(compns. suitable for electrochem. **cells**)

IT 9002-84-0 9002-88-4 9003-07-0 9003-53-6 24937-79-9 249756-67-0 249756-68-1
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(compns. suitable for electrochem. **cells**)

IT **1314-13-2**, Zinc oxide, uses **1314-35-8**, Tungsten oxide, uses **1314-62-1**, Vanadium pentoxide, uses **1332-29-2**, Tin oxide **3486-35-9**, Zinc carbonate **7439-93-2**, Lithium, uses **7782-42-5**, Graphite, uses **11098-99-0**, Molybdenum oxide **11113-67-0**, Iron lithium oxide **11126-15-1**, Lithium vanadium oxide **12017-97-9**, Chromium lithium titanate (CrLiTiO4) **12022-46-7**, Lithium ferrate (LiFeO2) **12031-65-1**, Lithium nickel oxide (LiNiO2) **12190-79-3**, Cobalt lithium oxide (CoLiO2) **12680-08-9**, Lithium titanium sulfide **13463-67-7**, Titanium dioxide, uses **13983-17-0**, Wollastonite **37296-91-6**, Lithium molybdenum oxide **37349-20-5**, Lithium tungsten oxide **37367-96-7**, Lithium molybdenum sulfide **39302-37-9**, Lithium titanium oxide **39457-42-6**, Lithium manganese oxide **51177-06-1**, Chromium lithium oxide **51680-57-0**, Lithium zirconium sulfide **56321-19-8**, Lithium niobium sulfide **61673-68-5**, Lithium tantalum sulfide **61673-71-0**, Lithium vanadium selenide **67542-73-8**, Lithium ruthenium oxide **71043-01-1**, Lithium nickel phosphorus sulfide **74245-06-0**, Lithium vanadium sulfide **76214-28-3**, Titanium carbonate **80341-49-7**, Iron lithium sulfide **96352-80-6**, Lithium molybdenum selenide **131344-56-4**, Cobalt lithium nickel oxide **146509-31-1**, Molybdenum carbonate **152991-98-5**, Aluminum lithium nickel oxide **153327-00-5**, Gallium lithium manganese oxide **159967-11-0**

, Lithium magnesium nickel oxide **177997-13-6**, Aluminum cobalt lithium nickel oxide **178961-04-1**, Iron lithium phosphide sulfide **182442-95-1**, Cobalt lithium manganese nickel oxide **249756-69-2**, Boron lithium nickel oxide **249756-70-5**, Tin boride phosphate (Sn2B(PO4))
RL: TEM (Technical or engineered material use); USES (Uses)
(compns. suitable for electrochem. **cells**)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

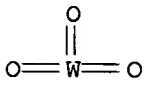
(1) Basf Ag; EP 0377199 A 1990 HCAPLUS
(2) Basf Ag; EP 0395990 A 1990 HCAPLUS
(3) Basf Ag; DE 19612769 A 1997 HCAPLUS
(4) Basf Coatings Ag; DE 19653631 A 1998 HCAPLUS
(5) Blum, R; US 5558911 A 1996 HCAPLUS
(6) Ciba-Geigy Ag; EP 0526399 A 1993 HCAPLUS
(7) Eisele, G; Macromol Chem Phys 1996, V197, P1731 HCAPLUS
(8) Hydro-Quebec; EP 0666607 A 1995 HCAPLUS
(9) Kozuka, S; US 5098973 A 1992 HCAPLUS
(10) Labes, M; US 4241149 A 1980 HCAPLUS
(11) Lohmann Gmbh; DE 4433290 A 1996 HCAPLUS

IT **1314-13-2**, Zinc oxide, uses **1314-35-8**, Tungsten oxide, uses **1314-62-1**, Vanadium pentoxide, uses **1332-29-2**, Tin oxide **3486-35-9**, Zinc carbonate **7439-93-2**, Lithium, uses **7782-42-5**, Graphite, uses **11098-99-0**, Molybdenum oxide **11113-67-0**, Iron lithium oxide **11126-15-1**, Lithium vanadium oxide **12017-97-9**, Chromium lithium titanate (CrLiTiO4) **12022-46-7**, Lithium ferrate (LiFeO2) **12031-65-1**, Lithium nickel oxide (LiNiO2) **12190-79-3**, Cobalt lithium oxide (CoLiO2) **12680-08-9**, Lithium titanium sulfide **13463-67-7**, Titanium dioxide, uses **13983-17-0**, Wollastonite **37296-91-6**, Lithium molybdenum oxide **37349-20-5**, Lithium tungsten oxide **37367-96-7**, Lithium molybdenum sulfide **39302-37-9**, Lithium titanium oxide **39457-42-6**, Lithium manganese oxide **51177-06-1**, Chromium lithium oxide **51680-57-0**, Lithium zirconium sulfide **56321-19-8**, Lithium niobium sulfide **61673-68-5**, Lithium tantalum sulfide **61673-71-0**, Lithium vanadium selenide **67542-73-8**, Lithium ruthenium oxide **71043-01-1**, Lithium nickel phosphorus sulfide **74245-06-0**, Lithium vanadium sulfide **76214-28-3**, Titanium carbonate **80341-49-7**, Iron lithium sulfide **96352-80-6**, Lithium molybdenum selenide **131344-56-4**, Cobalt lithium nickel oxide **146509-31-1**, Molybdenum carbonate **152991-98-5**, Aluminum lithium nickel oxide **153327-00-5**, Gallium lithium manganese oxide **159967-11-0**, Lithium magnesium nickel oxide **177997-13-6**, Aluminum cobalt lithium nickel oxide **178961-04-1**, Iron lithium phosphide sulfide **182442-95-1**, Cobalt lithium manganese nickel oxide **249756-69-2**, Boron lithium nickel oxide **249756-70-5**, Tin boride phosphate (Sn2B(PO4))
RL: TEM (Technical or engineered material use); USES (Uses)
(compns. suitable for electrochem. **cells**)

RN 1314-13-2 HCAPLUS
CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O=Zn

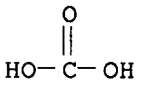
RN 1314-35-8 HCAPLUS
CN Tungsten oxide (WO3) (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 1332-29-2 HCAPLUS
CN Tin oxide (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 3486-35-9 HCAPLUS
CN Carbonic acid, zinc salt (1:1) (8CI, 9CI) (CA INDEX NAME)



RN 7439-93-2 HCAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

RN 7782-42-5 HCAPLUS
CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

RN 11098-99-0 HCAPLUS
CN Molybdenum oxide (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 11113-67-0 HCAPLUS
CN Iron lithium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Li	x	7439-93-2
Fe	x	7439-89-6

RN 11126-15-1 HCAPLUS
CN Lithium vanadium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
V	x	7440-62-2
Li	x	7439-93-2

RN 12017-97-9 HCAPLUS
CN Chromium lithium titanium oxide (CrLiTiO4) (7CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Cr	1	7440-47-3
Ti	1	7440-32-6
Li	1	7439-93-2

RN 12022-46-7 HCAPLUS
CN Iron lithium oxide (FeLiO2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Li	1	7439-93-2
Fe	1	7439-89-6

RN 12031-65-1 HCAPLUS
CN Lithium nickel oxide (LiNiO2) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Ni	1	7440-02-0
Li	1	7439-93-2

RN 12190-79-3 HCAPLUS
CN Cobalt lithium oxide (CoLiO2) (9CI) (CA INDEX NAME)

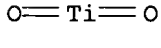
Component	Ratio	Component Registry Number
O	2	17778-80-2
Co	1	7440-48-4
Li	1	7439-93-2

RN 12680-08-9 HCAPLUS
CN Lithium titanium sulfide (9CI) (CA INDEX NAME)

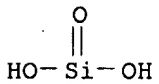
Component	Ratio	Component Registry Number
S	x	7704-34-9

Ti	x	7440-32-6
Li	x	7439-93-2

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



RN 13983-17-0 HCAPLUS
CN Wollastonite (Ca(SiO3)) (9CI) (CA INDEX NAME)



● Ca

RN 37296-91-6 HCAPLUS
CN Lithium molybdenum oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Mo	x	7439-98-7
Li	x	7439-93-2

RN 37349-20-5 HCAPLUS
CN Lithium tungsten oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
W	x	7440-33-7
Li	x	7439-93-2

RN 37367-96-7 HCAPLUS
CN Lithium molybdenum sulfide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
S	x	7704-34-9
Mo	x	7439-98-7
Li	x	7439-93-2

RN 39302-37-9 HCAPLUS
CN Lithium titanium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number

O	x	17778-80-2
Ti	x	7440-32-6
Li	x	7439-93-2

RN 39457-42-6 HCAPLUS
CN Lithium manganese oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Mn	x	7439-96-5
Li	x	7439-93-2

RN 51177-06-1 HCAPLUS
CN Chromium lithium oxide (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 51680-57-0 HCAPLUS
CN Lithium zirconium sulfide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
S	x	7704-34-9
Zr	x	7440-67-7
Li	x	7439-93-2

RN 56321-19-8 HCAPLUS
CN Lithium niobium sulfide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
S	x	7704-34-9
Nb	x	7440-03-1
Li	x	7439-93-2

RN 61673-68-5 HCAPLUS
CN Lithium tantalum sulfide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
S	x	7704-34-9
Ta	x	7440-25-7
Li	x	7439-93-2

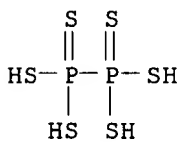
RN 61673-71-0 HCAPLUS
CN Lithium vanadium selenide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Se	x	7782-49-2
V	x	7440-62-2
Li	x	7439-93-2

RN 67542-73-8 HCAPLUS
CN Lithium ruthenium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Ru	x	7440-18-8
Li	x	7439-93-2

RN 71043-01-1 HCAPLUS
CN Thiohypophosphoric acid ([(HS)2P(S)]2), lithium nickel salt (9CI) (CA INDEX NAME)



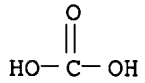
●x Li

●x Ni(x)

RN 74245-06-0 HCAPLUS
CN Lithium vanadium sulfide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
S	x	7704-34-9
V	x	7440-62-2
Li	x	7439-93-2

RN 76214-28-3 HCAPLUS
CN Carbonic acid, titanium salt (9CI) (CA INDEX NAME)



●x Ti(x)

RN 80341-49-7 HCAPLUS
CN Iron lithium sulfide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
S	x	7704-34-9
Li	x	7439-93-2
Fe	x	7439-89-6

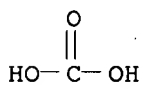
RN 96352-80-6 HCAPLUS
CN Lithium molybdenum selenide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Se	x	7782-49-2
Mo	x	7439-98-7
Li	x	7439-93-2

RN 131344-56-4 HCAPLUS
CN Cobalt lithium nickel oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Co	x	7440-48-4
Ni	x	7440-02-0
Li	x	7439-93-2

RN 146509-31-1 HCAPLUS
CN Carbonic acid, molybdenum salt (9CI) (CA INDEX NAME)



●x Mo(x)

RN 152991-98-5 HCAPLUS
CN Aluminum lithium nickel oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Ni	x	7440-02-0
Li	x	7439-93-2
Al	x	7429-90-5

RN 153327-00-5 HCAPLUS
CN Gallium lithium manganese oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number

O	x	17778-80-2
Ga	x	7440-55-3
Mn	x	7439-96-5
Li	x	7439-93-2

RN 159967-11-0 HCAPLUS
CN Lithium magnesium nickel oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Ni	x	7440-02-0
Mg	x	7439-95-4
Li	x	7439-93-2

RN 177997-13-6 HCAPLUS
CN Aluminum cobalt lithium nickel oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Co	x	7440-48-4
Ni	x	7440-02-0
Li	x	7439-93-2
Al	x	7429-90-5

RN 178961-04-1 HCAPLUS
CN Iron lithium phosphide sulfide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
P	x	7723-14-0
S	x	7704-34-9
Li	x	7439-93-2
Fe	x	7439-89-6

RN 182442-95-1 HCAPLUS
CN Cobalt lithium manganese nickel oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Co	x	7440-48-4
Ni	x	7440-02-0
Mn	x	7439-96-5
Li	x	7439-93-2

RN 249756-69-2 HCAPLUS
CN Boron lithium nickel oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2

B	x	7440-42-8
Ni	x	7440-02-0
Li	x	7439-93-2

RN 249756-70-5 HCAPLUS
CN Tin boride phosphate (Sn2B(PO4)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
B	1	7440-42-8
Sn	2	7440-31-5

L68 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:589062 HCAPLUS
DN 131:287388
TI Fabrication and characterization of porous membranes with highly ordered three-dimensional periodic structures
AU Gates, Byron; Yin, Yadong; Xia, Younan
CS Department of Chemistry, University of Washington, Seattle, WA, 98195-1700, USA
SO Chemistry of Materials (1999), 11(10), 2827-2836
CODEN: CMATEX; ISSN: 0897-4756
PB American Chemical Society
DT Journal
LA English
CC 38-3 (**Plastics** Fabrication and Uses)
AB This paper describes a procedure that uses opaline arrays of spherical particles (with diams. .gtoreq.100 nm) as templates to fabricate porous membranes having three-dimensional interconnected networks of air balls. An aq. dispersion of monodispersed polystyrene (or silica) beads was injected into a specially designed **cell** and assembled into an opaline array under external gas pressure and sonication. After drying, the void spaces among the spheres were filled with a liq. precursor such as a **UV**-curable (or thermally **crosslinkable**) **prepolymer** or a sol-gel soln. Subsequent solidification of the precursor and dissoln. of the particles produced a well-defined porous membrane having a complex, 3-dimensional architecture of air balls interconnected by a no. of small circular windows. The porous structure of this kind of membrane can be easily tailored by using colloidal **particles** with different **sizes**: when spherical **particles** of diam. D are used, the dimension of air balls in the bulk is .apprx.D, the size of circular windows interconnecting these air balls is .apprx.D/4, and the diam. of circular holes on the surfaces of the membrane is .apprx.D/2. The authors have demonstrated the fabrication procedure using a variety of materials, including a **UV**-curable poly(acrylate-methacrylate) **copolymer** (PAMC), **UV**-curable polyurethanes, and sol-gel precursors to oxide ceramics such as SiO2 or TiO2. The permeabilities of these porous membrane films for a no. of commonly used solvents were tested with a PAMC membrane as the example. The measurements indicate that the liq. permeability of this porous membrane strongly depends on the properties of the liq. In addn. to their uses in filtration, sepn., and tissue engineering, the porous membranes described should also find applications in fabricating diffractive sensors and photonic band gap (PBG) materials due to their 3-dimensional periodic structures.

ST pore size permeation membrane fabrication spherical array; polystyrene particle array fabrication permeation membrane; silica particle array fabrication permeation membrane; polymer membrane fabrication particle array; ceramic membrane fabrication particle array

IT Polyurethanes, uses
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(UV-curable; fabrication and characterization of porous membranes with highly ordered three-dimensional periodic structures)

IT Ceramics
Membranes, nonbiological
Permeation
Pore size
(fabrication and characterization of porous membranes with highly ordered three-dimensional periodic structures)

IT 7631-86-9P, Silica, uses
RL: DEV (Device component use); NUU (Other use, unclassified); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(array and membrane material; fabrication and characterization of porous membranes with highly ordered three-dimensional periodic structures)

IT 9003-53-6, Polystyrene
RL: NUU (Other use, unclassified); USES (Uses)
(array material; fabrication and characterization of porous membranes with highly ordered three-dimensional periodic structures)

IT 64-17-5, Ethanol, properties 67-56-1, Methanol, properties 67-63-0, 2-Propanol, properties 71-36-3, 1-Butanol, properties 7732-18-5, Water, properties
RL: PRP (Properties)
(characterization of porous membranes with highly ordered three-dimensional periodic structures)

IT 9003-21-8P, SK-9 **13463-67-7P**, Titania, uses
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(fabrication and characterization of porous membranes with highly ordered three-dimensional periodic structures)

RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD

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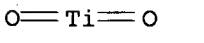
IT **13463-67-7P**, Titania, uses
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(fabrication and characterization of porous membranes with highly ordered three-dimensional periodic structures)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



L68 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:530587 HCAPLUS
DN 131:158626
TI Heat-resistant **polyimide**-coated **metal** substrates for photoelectric devices
IN Hayashi, Asaji; Yoshikawa, Takefumi
PA Mitsubishi Chemical Industries Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B32B015-08
ICS H01L031-04
CC 38-3 (**Plastics** Fabrication and Uses)
Section cross-reference(s): **52**, 55, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11227100	A2	19990824	JP 1998-36864	19980219
PRAI	JP 1998-36864		19980219		

AB Title substrates having 60-120.degree. V-type drains comprise **metal** sheets coated with **polyimide** films contg. 100-500% elec. insulating fine **particles** with av. **particle size** 0.05-5 .mu.m. Thus, a **compn.** contg. 3,4'-oxydianiline-4,4'-oxydiphthalic acid **copolymer** and spherical SiO2 particles was applied on a SUS 304 sheet and pressed with a transfer roll having a V-type drain to give a substrate. A solar **cell** with high photoelec. conversion efficiency was obtained using the substrates.

ST heat resistant **metal** substrate **polyimide** coating; silica elec insulator heat resistant substrate; photoelec device substrate polyimide heat resistance

IT Electric insulators
Heat-resistant materials
Photoelectric devices
Solar **cells**
(heat-resistant substrates having polyimide coatings contg. elec. insulators for photoelec. devices)

IT Polyimides, uses
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(heat-resistant substrates having polyimide coatings contg. elec. insulators for photoelec. devices)

IT 219505-64-3P, 3,4'-Oxydianiline-4,4'-oxydiphthalic acid **copolymer**
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**heat**-resistant substrates having polyimide coatings contg. elec. insulators for photoelec. devices)

IT 11109-50-5, SUS 304
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(heat-resistant substrates having polyimide coatings contg. elec. insulators for photoelec. devices)

IT 7631-86-9, Silica, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(spherical particles; heat-resistant substrates having polyimide coatings contg. elec. insulators for photoelec. devices)

L68 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:439585 HCAPLUS
DN 131:74473
TI Vinyl chloride resin **compositions** for foamed products
IN Tsukamoto, Atsushi; Nagase, Toshio
PA Nippon Zeon Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C08L027-06
ICS B27N001-00; B27N003-02; C08L001-00; C08L033-12; C08L033-20

CC 37-6 (**Plastics** Manufacture and Processing)
Section cross-reference(s): **38**

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11189694	A2	19990713	JP 1997-369479	19971226
PRAI	JP 1997-369479		19971226		

AB Vinyl chloride resin compns., for providing highly foamed products with uniform **cells**, smooth surfaces, and wood-like appearance, comprise (A) 100 parts of a vinyl chloride resin, (B) 20-150 parts of wood powder with av. **particle size** 50-500 .mu.m, (C) a thermoplastic resin contg. oxazoline group and compatible with the vinyl chloride resin, (D) a methacrylic **copolymer** with Me methacrylate content >60 wt.%, and (E) a thermally decomposable blowing agent. The compns. are useful in making construction products and furniture.

ST vinyl chloride **polymer** foam; wood powder polyvinyl chloride foam; oxazoline contg thermoplastic PVC foam; PVC foam wood powder

IT Wood
(flour; vinyl chloride resin compns. for foamed products)

IT Plastic foams
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(vinyl chloride resin compns. for foamed products)

IT 27341-60-2P, 2-Isopropenyl-2-oxazoline-methyl methacrylate **copolymer**
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(vinyl chloride resin compns. for foamed products)

IT 123-77-3, Diazenedicarboxamide
RL: MOA (Modifier or additive use); USES (Uses)
(vinyl chloride resin compns. for foamed products)

IT **13463-67-7**, Titanium oxide, uses 25852-37-3, Butyl acrylate-methyl methacrylate **copolymer** 58870-50-1, RAS 1005
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(vinyl chloride resin compns. for foamed products)

IT 9002-86-2, Polyvinyl chloride 9002-86-2
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(vinyl chloride resin compns. for foamed products)

IT **13463-67-7**, Titanium oxide, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(vinyl chloride resin compns. for foamed products)

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L68 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2003 ACS

AN 1999:439584 HCAPLUS

DN 131:117064

TI Vinyl chloride resin **compositions** for foamed products

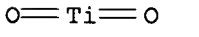
IN Tsukamoto, Atsushi; Nagase, Toshio

PA Nippon Zeon Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C08L027-06
ICS B27N001-00; B27N003-02; C08L001-00; C08L033-12; C08L033-20
CC 37-6 (**Plastics** Manufacture and Processing)
Section cross-reference(s): **38**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11189693	A2	19990713	JP 1997-369478	19971226
PRAI	JP 1997-369478		19971226		

AB Vinyl chloride resin compns., for providing highly foamed products with uniform **cells**, smooth surfaces, and wood-like appearance, comprise (A) 100 parts of a vinyl chloride resin, (B) 20-150 parts of wood powder with av. **particle size** 50-500 .mu.m, (C) a thermoplastic resin contg. epoxy group and compatible with the vinyl chloride resin, (D) a methacrylic **copolymer** with Me methacrylate content >60 wt.%, and (E) a thermally decomposable blowing agent. The compns. are useful in making construction products and furniture.
ST vinyl chloride **polymer** foam; wood powder polyvinyl chloride foam; PVC foam wood powder
IT Wood
(flour; vinyl chloride resin compns. for foamed products)
IT Plastic foams
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(vinyl chloride resin compns. for foamed products)
IT 25852-37-3P, Butyl acrylate-methyl methacrylate **copolymer**
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(vinyl chloride resin compns. for foamed products)
IT 123-77-3, Diazenedicarboxamide
RL: MOA (Modifier or additive use); USES (Uses)
(vinyl chloride resin compns. for foamed products)
IT **13463-67-7**, Titanium oxide, uses 26141-88-8, Glycidyl methacrylate-methyl methacrylate **copolymer** 26874-96-4, Glycidyl methacrylate-vinyl chloride **copolymer** 38891-67-7, Acrylonitrile-allyl glycidyl ether-styrene **copolymer** 203460-48-4, E 60T5-3
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(vinyl chloride resin compns. for foamed products)
IT 9002-86-2, Polyvinyl chloride 9002-86-2
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(vinyl chloride resin compns. for foamed products)
IT **13463-67-7**, Titanium oxide, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(vinyl chloride resin compns. for foamed products)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



L68 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:439333 HCAPLUS
DN 131:74577
TI Rotational molding **compositions** and process for one-step production of rotomolded articles having foamed inner layer and non-foamed exterior skin
IN Strebel, Jeffrey J.
PA Equistar Chemicals, LP, USA
SO U.S., 9 pp., Cont.-in-part of U.S. 5,783,611.
CODEN: USXXAM
DT Patent
LA English
IC ICM C08J009-34
NCL 521051000
CC 38-2 (**Plastics** Fabrication and Uses)
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5922778	A	19990713	US 1998-114977	19980714
	US 5783611	A	19980721	US 1997-842777	19970417
PRAI	US 1996-18261P	P	19960524		
	US 1997-842777	A2	19970417		

AB Compns. useful for the prodn. of rotationally molded articles having foamed interiors and non-foamed exterior skins contain a thermoplastic resin component which is an ethylene **polymer** in pellet form contg. a chem. foaming agent, an org. peroxide and, optionally, a metal-contg. activator compd. and a second resin component which is a powder and can be a thermoplastic ethylene **polymer** or ethylene **copolymer** having less than 30% crystallinity. The compns. can be used to produce foamed rotomolded articles having an exterior skin substantially free of surface defects, such as pitting and color blotches. Thus, a rotomolding **compn**. was prepd. from 40% foamable resin, i.e, pellets of HDPE having a melt index of 5.5 g/10 min and d. 0.961 g/cm3 and contg. 0.6% azodicarbonamide, and 60% non-foamable resin powder, i.e., a mixt. of 90% LDPE having a melt index of 0.25 g/10 min and d. 0.918 g/cm3 and 10% LLDPE having a melt index of 3.5 g/10 min and d. 0.918 g/cm3. The mean **particle size** of the LDPE powder was 370 .mu., whereas that of the LLDPE powder was 185 .mu.. A tank rotomolded from the **compn**. had good rigidity and mech. strength. The exterior skin was smooth and substantially free of surface pitting and a sharp boundary between the foam and skin layers was obsd. The foam layer had a uniform **cell** structure with a smooth, continuous interior surface.

ST polyethylene rotational molding **compn**; LLDPE rotational molding **compn**; ethylene **polymer** rotational molding **compn**

IT Linear low density polyethylenes
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)
(ethylene **polymer** rotational molding compns. for one-step rotomolding of articles with foamed interior and non-foamed exterior skin)

IT Molding of plastics and rubbers
(rotational; ethylene **polymer** rotational molding compns. for one-step rotomolding of articles with foamed interior and non-foamed exterior skin)

IT 74-85-1D, Ethene, **polymers** with .alpha.-olefins,

polymers with .alpha.-olefins, **polymers** with .alpha.-olefins, uses
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)
(LLDPE, linear low-d. polyethylenes; ethylene **polymer** rotational molding compns. for one-step rotomolding of articles with foamed interior and non-foamed exterior skin)

IT 557-05-1, Zinc stearate **1314-13-2**, Zinc oxide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(activator; ethylene **polymer** rotational molding compns. for one-step rotomolding of articles with foamed interior and non-foamed exterior skin)

IT 78-63-7, 2,5-Dimethyl-2,5-di-(tert-butylperoxy)-hexane 80-43-3, Dicumyl peroxide 110-05-4, Di-tert-butyl peroxide 1068-27-5, 2,5-Dimethyl-2,5-di-(tert-butylperoxy)-3-hexyne 3457-61-2, tert-Butylcumyl peroxide 25155-25-3, Bis(tert-butylperoxyisopropyl)benzene
RL: NUU (Other use, unclassified); USES (Uses)
(ethylene **polymer** rotational molding compns. for one-step rotomolding of articles with foamed interior and non-foamed exterior skin)

IT 9002-88-4, Polyethylene 25087-34-7 25213-02-9, Ethylene-1-hexene **copolymer** 26221-73-8, Ethylene-1-octene **copolymer**
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)
(ethylene **polymer** rotational molding compns. for one-step rotomolding of articles with foamed interior and non-foamed exterior skin)

IT 77-92-9, uses 123-77-3, Diazenedicarboxamide 144-55-8, Sodium bicarbonate, uses 29221-52-1, Oxybis(benzenesulfonyl) hydrazide
RL: NUU (Other use, unclassified); USES (Uses)
(foaming agent; ethylene **polymer** rotational molding compns. for one-step rotomolding of articles with foamed interior and non-foamed exterior skin)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

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(2) Duffy; US 4952350 1990
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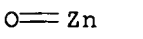
(4) Hosoda; US 3814778 1974 HCAPLUS
(5) Lammers; US 3984511 1976
(6) Mori; US 3962390 1976
(7) Schrijver; US 4533696 1985 HCAPLUS
(8) Shiina; US 3914361 1975 HCAPLUS
(9) Slapnik; US 2989783 1961
(10) Strebel; US 5783611 1998 HCAPLUS

IT **1314-13-2**, Zinc oxide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(activator; ethylene **polymer** rotational molding compns. for one-step rotomolding of articles with foamed interior and non-foamed exterior skin)

RN 1314-13-2 HCAPLUS
CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)



L68 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:417659 HCAPLUS
DN 131:61132
TI Electrically insulating substrates for amorphous silicon thin film solar **cells**
IN Mori, Koji; Watanabe, Keiichi; Ohkubo, Kenichi; Koshiishi, Kenji
PA Nisshin Steel Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01L031-04
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): **38**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11177111	A2	19990702	JP 1997-343535	19971215
PRAI	JP 1997-343535		19971215		

AB The substrate comprises metal supports having **heat**-resistant elec. insulating **polymer** layer having surface roughness (Rmax) 0.3-1.5 .mu.m and contg. 3-50 vol.% pigments of av. **particle size** 0.1-3 .mu.m. The substrates have high flexibility and heat resistance and show high photoelec. conversion efficiency.
ST amorphous silicon thin film solar **cell**; **heat** resistant **polymer** insulation coating substrate; substrate amorphous silicon solar **cell**; pigment contg polymer solar **cell** substrate
IT Heat-resistant materials
(films; metals with **heat**-resistant elec. insulating **polymer** coatings contg. pigments as substrates for amorphous Si substrate thin film solar **cells**)
IT Films
(heat-resistant; metals with **heat**-resistant elec. insulating **polymer** coatings contg. pigments as substrates for amorphous Si substrate thin film solar **cells**)
IT Dielectric films
Solar **cells**
(metals with **heat**-resistant elec. insulating **polymer** coatings contg. pigments as substrates for amorphous Si substrate thin film solar **cells**)
IT **Polyimides**, uses
RL: DEV (Device component use); USES (Uses)
(**metals** with **heat**-resistant elec. insulating **polymer** coatings contg. pigments as substrates for amorphous Si substrate thin film solar **cells**)
IT Polysulfones, uses
Polysulfones, uses
RL: DEV (Device component use); USES (Uses)
(polyether-; metals with **heat**-resistant elec. insulating **polymer** coatings contg. pigments as substrates for amorphous Si substrate thin film solar **cells**)
IT Polyethers, uses
Polyethers, uses
RL: DEV (Device component use); USES (Uses)
(polysulfone-; metals with **heat**-resistant elec. insulating **polymer** coatings contg. pigments as substrates for amorphous Si

substrate thin film solar **cells**)
IT 7440-21-3, Silicon, uses
RL: DEV (Device component use); USES (Uses)
(amorphous; metals with **heat**-resistant elec. insulating **polymer** coatings contg. pigments as substrates for amorphous Si substrate thin film solar **cells**)
IT 1344-28-1, Aluminum **oxide** (Al2O3), uses 7631-86-9, Silica, uses **13463-67-7**, Titanium **oxide**, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(pigment; **metals** with **heat**-resistant elec. insulating **polymer** coatings contg. pigments as substrates for amorphous Si substrate thin film solar **cells**)
IT 11109-52-7, SUS 430
RL: DEV (Device component use); USES (Uses)
(support; metals with **heat**-resistant elec. insulating **polymer** coatings contg. pigments as substrates for amorphous Si substrate thin film solar **cells**)
IT **13463-67-7**, Titanium **oxide**, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(pigment; **metals** with **heat**-resistant elec. insulating **polymer** coatings contg. pigments as substrates for amorphous Si substrate thin film solar **cells**)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L68 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:271591 HCAPLUS
DN 130:284483
TI Composite suitable for use in electrochemical **cells**
IN Bauer, Stephan; Bronstert, Bernd; Mohwald, Helmut; Stephan, Oskar; Tukamoto, Hisashi
PA BASF Aktiengesellschaft, Germany; GS Japan Storage
SO PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM H01M
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): **38**, **72**, 74
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9919917	A2	19990422	WO 1998-EP6394	19981008
WO 9919917	A3	19990624		

W: AL, AU, BG, BR, BY, CA, CN, CZ, GE, HU, ID, IL, JP, KR, KZ, LT, LV, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TR, UA, US, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

CA 2305218	AA	19990422	CA 1998-2305218	19981008

	AU 9912266	A1	19990503	AU 1999-12266	19981008
	EP 1029382	A1	20000823	EP 1998-955417	19981008
	R: DE, ES, FR, GB, IT				
	JP 2001520439	T2	20011030	JP 2000-516380	19981008
PRAI	DE 1997-19744660	A	19971009		
	WO 1998-EP6394	W	19981008		

AB A composite comprises at least one first layer which comprises a mixt. Ia, comprising a mix IIa consisting of (a) 1-95 wt.% of a solid III (preferably a basic solid III) having a primary **particle size** of from 5 nm to 20 .mu.m and (b) 5-99 wt.% of a **polymeric compn.** IV obtainable by **polymn.** of (b1) 5-100 wt.%, based on the **compn.** IV, of a condensation product V of (.alpha.) at least one compd. VI which is able to react with a carboxylic acid or a sulfonic acid or a deriv. or a mixt. of two or more thereof, and (.beta.) at least 1 mol per mol of the compd. VI of a carboxylic acid or sulfonic acid VII which contains at least one free-radically **polymerizable** functional group, or a deriv. thereof or a mixt. of two or more thereof, and (b2) .ltoreq.95 wt.%, based on the **compn.** IV, of a further compd. VIII having a mean mol. wt. (no. av.) of at least 5000 and polyether segments in the main chain or a side chain. The proportion by wt. of the mix IIa in the mixt. Ia is 1-100 wt.%, and the layer is free of an electron-conducting, electrochem. active compd. At least one second layer comprises an electron-conducting, electrochem. active compd., wherein the first layer or layers and the second layer or layers are joined to one another by one of the two methods: lamination of the first layer or layers with the second layer or layers under the action of heat and/or pressure or corona treatment of the first layer or layers, the second layer or layers, or the first layer or layers and the second layer or layers and subsequent bringing together of the corona-treated first layer or layers with the corona-treated or untreated second layer or layers.

ST battery composite; electrochromic window composite; sensor composite; display composite; **polymer** composite electrochem **cell**

IT Isobutylene rubber
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(Oppanol B 200; composite suitable for use in electrochem. **cells**)

IT Capacitors
Optical imaging devices
Secondary batteries
Sensors
(composite suitable for use in electrochem. **cells**)

IT Polyolefins
Polyoxyalkylenes, uses
Polyurethanes, uses
RL: DEV (Device component use); USES (Uses)
(composite suitable for use in electrochem. **cells**)

IT Polyesters, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(composite suitable for use in electrochem. **cells**)

IT Windows
(electrochromic; composite suitable for use in electrochem. **cells**)

IT Lamination
(hot; composite suitable for use in electrochem. **cells**)

IT Films

(ion-conducting; composite suitable for use in electrochem. **cells**)

IT Epoxides
RL: DEV (Device component use); USES (Uses)
(silyl, wollastonite hydrophobicized with; composite suitable for use in electrochem. **cells**)

IT Electric corona
(treatment; composite suitable for use in electrochem. **cells**)

IT Electrochromic devices
(windows; composite suitable for use in electrochem. **cells**)

IT 9003-49-0, Acronal 102
RL: TEM (Technical or engineered material use); USES (Uses)
(Acronal 102; composite suitable for use in electrochem. **cells**)

IT 9003-19-4, Polyvinyl ether 9003-27-4, Polyisobutylene 9003-39-8, Polyvinylpyrrolidone 9011-17-0, Hexafluoropropene-vinylidene fluoride **copolymer** 25322-68-3 122985-55-1, Ethylene oxide-propylene oxide block **copolymer** dimethacrylate
RL: DEV (Device component use); USES (Uses)
(composite suitable for use in electrochem. **cells**)

IT 25038-59-9, Polyethylene terephthalate, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(composite suitable for use in electrochem. **cells**)

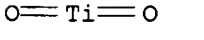
IT 75-56-9, uses 78-42-2, Tris(2-ethylhexyl)phosphate 7631-86-9D, Silica, silane-modified, uses **13463-67-7**, Titania, uses 112153-71-6, Aerosil r812
RL: MOA (Modifier or additive use); USES (Uses)
(composite suitable for use in electrochem. **cells**)

IT **13983-17-0**, Wollastonite
RL: DEV (Device component use); USES (Uses)
(epoxysilane hydrophobicized; composite suitable for use in electrochem. **cells**)

IT 9003-27-4
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(isobutylene rubber, Oppanol B 200; composite suitable for use in electrochem. **cells**)

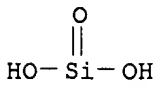
IT **13463-67-7**, Titania, uses
RL: MOA (Modifier or additive use); USES (Uses)
(composite suitable for use in electrochem. **cells**)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **13983-17-0**, Wollastonite
RL: DEV (Device component use); USES (Uses)
(epoxysilane hydrophobicized; composite suitable for use in electrochem. **cells**)

RN 13983-17-0 HCAPLUS
CN Wollastonite (Ca(SiO3)) (9CI) (CA INDEX NAME)



L68 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1991:83331 HCAPLUS
DN 114:83331
TI Highly expandable vinyl chloride resin **compositions**
IN Shima, Yasuhiro; Yasui, Hiroyuki; Takahashi, Hideyuki; Tsujimoto, Hideo; Nakashita, Suenori
PA Sakai Chemical Industry Co., Ltd., Sakai, Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C08J009-10
ICI C08L027-06
CC 37-6 (**Plastics** Manufacture and Processing)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 02242832	A2	19900927	JP 1989-64278	19890315
PRAI JP 1989-64278		19890315		

AB The title compns. contain ZnO [av. **particle size** (D) .ltoreq.0.05 .mu.m, sp. surface 25 m2/g), plastisols of vinyl chloride **polymers** prepd. by emulsion **polymn.**, and azodicarbonamide (I) blowing agent. Thus, a mixt. of plastisol PVC 100, DOP 70, I 3, TiO2 10, CaCO3 120, **cell** regulator 0.4, and ZnO (D 0.05 .mu.m) 2 parts was coated on fireproof paper and heated at 200.degree. for 35 s to give a gelled sheet. The sheet was heated at 220.degree. for 50 s to give a foam sheet with expansion ratio 1.30; vs. 1.05 when ZnO with D 0.51 .mu.m was used.
ST PVC plastisol foamable; azodicarbonamide blowing agent; blowing agent PVC plastisol; zinc oxide PVC foam
IT 123-77-3, Azodicarbonamide
RL: USES (Uses)
(blowing agents, for PVC plastisols)
IT 9002-86-2P, Poly(vinyl chloride)
RL: PREP (Preparation)
(cellular, plastisol compounding for manuf. of)
IT **1314-13-2**, Zinc oxide, uses and miscellaneous
RL: USES (Uses)
(in foamable PVC plastisols)
IT **1314-13-2**, Zinc oxide, uses and miscellaneous
RL: USES (Uses)
(in foamable PVC plastisols)
RN 1314-13-2 HCAPLUS
CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O=Zn

L68 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1989:518136 HCAPLUS
DN 111:118136
TI Lithium graphitic oxide **cells**. Part V. An all-solid-state battery using graphite oxide as active cathodic material
AU Mermoux, M.; Touzain, P.
CS INPG, ENS Electrochim. d'Electrometallurg. Grenoble, Saint Martin d'Heres, 38402, Fr.
SO Journal of Power Sources (1989), 26(3-4), 529-34
CODEN: JPSODZ; ISSN: 0378-7753
DT Journal
LA English
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): **38, 72**
AB An all-solid-state Li/PEO-LiClO4/graphite oxide battery had an active material utilization of .ltoreq.0.1 mA/cm2; the Li diffusivity in the cathode material was 6 .+-. 3 x 10-12 cm2/s. The graphite oxide was prepd. from a small **particle-size** natural graphite using the method given by R. Yazami et al., (1985); the yellow powder obtained had a chem. **compn**. close to C8H2O4. The cathodes were prepd. by mixing the graphite oxide with 10 vol.% acetylene black and 30-40 vol.% PEO-LiClO4 to form a slurry that was spread onto a stainless steel current collector. The Faradaic efficiency of the cathode decreased with loading (Li intercalation/oxidn.) and was also affected by the thickness of the cathode layer and the **polymer** electrolyte cond.
ST lithium graphite oxide solid battery; PEO graphite oxide cathode lithium; conducting **polymer** PEO electrolyte battery; intercalation diffusion lithium graphite oxide
IT Electric conductivity and conduction
(of PEO-lithium perchlorate electrolytes, graphite oxide cathode Faradaic efficiency in relation to)
IT Diffusion
(of lithium, in graphite oxide cathode, in solid-state batteries with PEO-lithium perchlorate electrolyte)
IT Cathodes
(battery, graphite oxide, prepn. and lithium intercalation in, in solid-state battery with PEO-lithium perchlorate electrolyte)
IT Inclusion reaction
(intercalation, electrochem., of lithium, by graphite oxide cathode, in solid-state batteries with PEO-lithium perchlorate electrolyte)
IT Batteries, secondary
(solid-electrolyte, lithium-graphite oxide, with PEO-lithium perchlorate electrolyte, fabrication and performance of)
IT **7782-42-5P**, Graphite, uses and miscellaneous
RL: PREP (Preparation)
(cathodes, prepn. and lithium intercalation in, in solid-state battery with PEO-lithium perchlorate electrolyte)
IT 7791-03-9, Lithium perchlorate (LiClO4)
RL: USES (Uses)
(electrolytes of PEO and, in lithium-graphite oxide solid-state battery)
IT 25322-68-3, PEO

RL: USES (Uses)
(electrolytes of lithium perchlorate and, in lithium-graphite oxide solid-state battery)
IT **7439-93-2**, Lithium, uses and miscellaneous
RL: USES (Uses)
(intercalation of, by graphite oxide cathode, in solid-state batteries with PEO-lithium perchlorate electrolyte)
IT **7782-42-5P**, Graphite, uses and miscellaneous
RL: PREP (Preparation)
(cathodes, prepn. and lithium intercalation in, in solid-state battery with PEO-lithium perchlorate electrolyte)
RN 7782-42-5 HCAPLUS
CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

IT **7439-93-2**, Lithium, uses and miscellaneous
RL: USES (Uses)
(intercalation of, by graphite oxide cathode, in solid-state batteries with PEO-lithium perchlorate electrolyte)
RN 7439-93-2 HCAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

L68 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1980:642724 HCAPLUS
DN 93:242724
TI Method of manufacturing electrocatalysts for use in fuel **cell** electrodes
IN Hervert, George L.; Welsh, Lawrence B.
PA UOP Inc., USA
SO Brit., 11 pp.
CODEN: BRXXAA
DT Patent
LA English
IC B01J031-06; B01J031-28; H01M004-88; H01M004-92
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 67
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 1572558	A	19800730	GB 1977-15955	19770418
	US 4031292	A	19770621	US 1976-678003	19760419
PRAI	US 1976-678003		19760419		
	US 1976-678004		19760419		

AB The title catalysts are prepd. by treating an inorg. refractory oxide having surface area 1-500 m2/g with an org. compd. under pyrolysis conditions to form a layer of a carbonaceous **pyropolymer**, impregnating the **compn**. with a soln. contg. .gtoreq.1 compd. of a catalytically active metal, heating the material to evap. the solvent, and reducing the material to form the catalyst. The temps. attained after

impregnation do not disrupt the metal crystallite size. Thus, .gamma.-Al2O3 (**particle size** 2.mu.) was calcined 3 h at .apprx.550.degree., treated with C6H6 1.5 h at 900.degree. in a fluidized bed reactor, stabilized 1.5 h at 900.degree. and 1 atm, and 53.9 g material was mixed with 4.90 g H2PtCl6 soln. contg. 24.7% Pt and 110 g H2O. The mixt. was stirred 0.5 h at ambient temp., evapd., and dried 6 h at 110.degree. followed by redn. with H 1.6 h at 535.degree.. The product contained 2.24 Pt and 40.35% C, and had surface area .apprx.82 m2/g and elec. resistance 0.018 .OMEGA.-cm compared with 68 m2/g and 0.010 .OMEGA.-cm for a catalyst manufd. with the sequence of Pt impregnation and C6H6 treatment reversed.

ST fuel **cell** electrode catalyst; platinum catalyst fuel **cell**; **polymer** carbonaceous fuel **cell** electrode

IT Electrodes
(fuel-**cell**, catalytic, impregnation of refractory oxide-pyrolytic carbon with platinum-group metal for)

IT 7440-06-4P, uses and miscellaneous
RL: CAT (Catalyst use); PREP (Preparation); USES (Uses)
(catalysts, fuel-**cell**, refractory oxide-pyrolytic carbon impregnated with, manuf. of)

IT 70-49-5
RL: USES (Uses)
(metal catalyst impregnation in presence of, fuel-**cell**, for crystallite size control)

IT **7782-42-5**, uses and miscellaneous
RL: USES (Uses)
(pyrolytic, refractory oxide coated with, impregnation of, with metal catalyst, for fuel-**cell** electrodes)

IT **7782-42-5**, uses and miscellaneous
RL: USES (Uses)
(pyrolytic, refractory oxide coated with, impregnation of, with metal catalyst, for fuel-**cell** electrodes)

RN 7782-42-5 HCAPLUS

CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

L68 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2003 ACS

AN 1978:598597 HCAPLUS

DN 89:198597

TI Blowing agent **composition**

IN Collington, Kenneth Thomas; Puri, Rishi Raman

PA Fisons Ltd., UK

SO Ger. Offen., 20 pp.
CODEN: GWXXBX

DT Patent

LA German

IC C08J009-10

CC 36-6 (**Plastics** Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2811845	A1	19780928	DE 1978-2811845	19780317
	NL 7802979	A	19780928	NL 1978-2979	19780320
	FR 2384815	A1	19781020	FR 1978-8566	19780323

	BE 865320	A1	19780925	BE 1978-186276	19780324
	JP 53120777	A2	19781021	JP 1978-33649	19780325
	ES 468227	A1	19781201	ES 1978-468227	19780325
PRAI	GB 1977-12812		19770326		
	GB 1978-1548		19780114		

AB A Co salt or oxide and a Zn salt or oxide are mixed with azodicarbonamide [123-77-3] blowing agent to improve the **cell** structure of crosslinked polyethylene [9002-88-4] foams prepd. with the blowing agent. In some cases, a tin or Cr compd. is also added to the blowing agent. Thus, azodicarbonamide (av. **particle size** 15 .mu.) was mixed with 0.05% Co carbonate and 0.15% ZnO to prep. a blowing agent for low-d. polyethylene contg. dicumyl peroxide.

ST azodicarbonamide blowing agent **polymer**; polyethylene blowing agent azodicarbonamide; cobalt azodicarbonamide blowing agent; zinc azodicarbonamide blowing agent

IT 557-05-1 **1314-13-2**, uses and miscellaneous **3486-35-9**
7646-85-7, uses and miscellaneous
RL: USES (Uses)
(azodicarbonamide blowing agents contg. cobalt compds. and, for improved plastic foams)

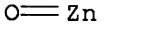
IT 513-79-1 18130-42-2
RL: USES (Uses)
(azodicarbonamide blowing agents contg. zinc compds. and, for improved plastic foams)

IT 123-77-3
RL: USES (Uses)
(blowing agents, contg. cobalt and zinc compds., for manuf. of improved plastic foams)

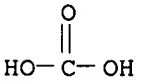
IT 9002-88-4P
RL: PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)
(cellular, manuf. of, azodicarbonamide contg. cobalt and zinc compds. for)

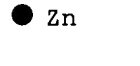
IT **1314-13-2**, uses and miscellaneous **3486-35-9**
RL: USES (Uses)
(azodicarbonamide blowing agents contg. cobalt compds. and, for improved plastic foams)

RN 1314-13-2 HCAPLUS
CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)



RN 3486-35-9 HCAPLUS
CN Carbonic acid, zinc salt (1:1) (8CI, 9CI) (CA INDEX NAME)





L68 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1975:482607 HCAPLUS
DN 83:82607
TI Alkaline **cell**
IN Takamura, Isutomu; Kanada, Yoshimi; Suzuki, Shintari
PA Tokyo Shibaura Electric Co., Ltd., Japan
SO U.S., 6 pp.
CODEN: USXXAM
DT Patent
LA English
IC H01M
NCL 136030000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 3870564	A	19750311	US 1973-346433	19730330
PRAI US 1973-346433		19730330		

AB The battery contg. a Zn [7440-66-6] anode contg. a mixt. of powd. amalgamated Zn, ZnO [**1314-13-2**], a **metal oxide** durable in alk. solns., a gel-forming material, and an alkaline electrolyte has an improved capacity under heavy current-discharge loads, improved low-temp. discharge characteristics, and improved stability during storage. The anode **compn.** may be shaped in the form of a sheet which may be combined with a sheet of liq.-holding material and a separator sheet. Thus, a powd. mixt. **compn.** of the anode was: amalgamated (10%) Zn [55961-37-0] (**particle size** through 100 mesh) 97, ZnO 1, MgO [1309-48-4] 2, and carboxylmethyl **polymer** powder 2.2 parts. Thoroughly mixed powders (100 parts) were mixed with 70 parts of 35% KOH contg. 5% ZnO.

ST alk battery zinc anode

IT Anodes
(battery, zinc, contg. zinc oxide)

IT **Polymers**, uses and miscellaneous
RL: USES (Uses)
(carboxylated, anodes contg., alk. battery zinc)

IT 1303-96-4 1309-48-4, uses and miscellaneous **1314-13-2**, uses and miscellaneous 1314-23-4, uses and miscellaneous 9003-04-7 9004-34-6, uses and miscellaneous **13463-67-7**, uses and miscellaneous
RL: USES (Uses)
(anodes contg., alk. battery zinc)

IT 7440-66-6, uses and miscellaneous
RL: USES (Uses)
(anodes, alk. battery)

IT 55961-37-0 56199-31-6
RL: USES (Uses)
(anodes, contg. zinc oxide, alk. battery)

IT **1314-13-2**, uses and miscellaneous **13463-67-7**, uses and miscellaneous
RL: USES (Uses)
(anodes contg., alk. battery zinc)

RN 1314-13-2 HCAPLUS
CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O=Zn

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L68 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1972:141824 HCAPLUS
DN 76:141824
TI Open-**cell** ethylene copolymer foams
IN Trieschmann, Hans G.; Zizlsperger, Johann; Tatzel, Hermann; Zettler, Hans D.; Jaeger, Hans
PA Badische Anilin- und Soda-Fabrik A.-G.
SO Patentschrift (Switz.), 18 pp.
CODEN: SWXXAS
DT Patent
LA German
IC B29D
CC 36 (**Plastics** Manufacture and Processing)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CH 2033007		19720113	CH 1970-2033007	19700703

AB Ethylene-unsatd. ester copolymer foams are prep. by mixing the **polymer** with sufficient **crosslinking** agent to give a 20-60% increase in tensile strength and a propellant at temps. above the cryst. m.p. of the polymer and pressures above the vapor pressure of the propellant, cooling the mixt. to a temp. from 20.deg. below to 15.deg. above the cryst. m.p. under pressure to inhibit foaming for .geq.10 min., and extrusion of the mixt. into a low-pressure zone. Thus, a mixt. of 5:10:85 acrylic acid-tert-butyl acrylate-ethylene copolymer 100, talc 3, and zinc oxide [**1314-13-2**] (**particle size** <100.mu.) 3 parts contg. 15% isobutane [75-28-5] is prepd. at 175.deg., cooled to 100.deg. and held 1.5 hr under pressure, and extruded through a 12.tim.0.5cm slit to give a 200cm2 cross section foam, gel content 17%, d. 25 g/l., contg. 90% open **cells**. In the absence of ZnO no foam was obtained.
ST ethylene copolymer foam; isobutane blowing agent; crossliinking ethylene copolymer; zinc oxide crosslinker; acrylic acid copolymer; butyl acrylate copolymer
IT Alkanes, uses and miscellaneous
RL: USES (Uses)
(blowing agents, for ethylene copolymer foams)
IT Plastics, cellular
RL: RCT (Reactant); RACT (Reactant or reagent)
(crosslinking of, process for)
IT **Crosslinking**
(of ethylene **copolymer** foams, by **metal oxides** and isocyanates)
IT 75-28-5 78-78-4 106-97-8, uses and miscellaneous 110-54-3, reactions
RL: USES (Uses)
(blowing agents, for ethylene copolymer foams)

IT 24937-78-8 25266-67-5 26355-78-2
RL: USES (Uses)
(cellular, crosslinking of)
IT 101-68-8 1304-28-5, reactions 1305-78-8, reactions **1314-13-2**
, properties
RL: RCT (Reactant); RACT (Reactant or reagent)
(**crosslinking** by, of ethylene **copolymer** foams)
IT 9003-27-4
RL: USES (Uses)
(ethylene **copolymer** foams contg., **crosslinking** of)
IT **1314-13-2**, properties
RL: RCT (Reactant); RACT (Reactant or reagent)
(**crosslinking** by, of ethylene **copolymer** foams)
RN 1314-13-2 HCAPLUS
CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

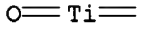
O═Zn

L68 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2003 ACS
AN 1970:67664 HCAPLUS
DN 72:67664
TI Conducting plastics
IN Ehrreich, John E.; Reti, Adrian R.
PA Ercon Inc.
SO Fr. Demande, 27 pp.
CODEN: FRXXBL
DT Patent
LA French
IC H01B; C08J
CC 36 (**Plastics** Manufacture and Processing)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI FR 2001972		19691003		
PRAI US		19680215		

AB A particulate, hard, nonfluid compressible resin, optionally contg. carbon black, is mixed with a liq. resin binder and an elec. conducting particulate filler and the **compn**. molded to give elec. conducting plastic articles with good phys. properties. Thus, 9 parts liq. silicone resin (RTV 615A) and 1 part catalyst (RTV 615B) were mixed at 150.degree. for 15 min to give a rubbery **polymer** with Shore A hardness 40 and tensile strength 70 kg/cm2, which was ground into 0.76-mm diam. particles. The particles (2 g) were mixed with 3 g of the uncured 9:1 resin-catalyst mixt., 3.5 g alumina powder of particle diam. 0.044 mm (Alcoa T61), and 5 g Ag flakes of **particle size** <0.044 mm (Silflake 135), and the mixt. was held at 141.degree. in a mold for 30 min under light pressure to give a 76-mm diam. disk 1.52 mm thick contg. 7.8% by vol. Ag, with a resistance of 0.6 ohm. Similar composites were prepd. using resin mixts. contg. epoxy resins, polyether-diamines (HC-1101), and 2,4,6-tris(dimethylaminomethyl)phenol, closed **cell** silicone foams, dicumyl peroxide, butadiene-styrene **copolymer** (Poly B-D CS-15), a diol (Isonol C-100), an isocyanate (Isonate 143L), and stannous octanoate, urethane rubber, and polyamides. Other fillers used were Ag powder, granulated Cu, Cu fiber, stainless fiber, and TiO2.
ST conducting plastics resins; resins conducting plastics; plastics resins

conducting; silicone resin plastics
IT Siloxanes, uses and miscellaneous
RL: USES (Uses)
(cellular, filler for electrically conducting)
IT Rubber, silicone
Rubber, urethane, uses and miscellaneous
Plastics
Polyamide, uses and miscellaneous
Resins, epoxy, uses and miscellaneous
RL: USES (Uses)
(electrically conducting, filler for)
IT Carbon black, uses and miscellaneous
RL: USES (Uses)
(fillers, for electrically conducting **polymers**)
IT 1344-28-1, uses and miscellaneous 7429-90-5, uses and miscellaneous
7440-22-4, uses and miscellaneous 7440-50-8, uses and miscellaneous
13463-67-7, uses and miscellaneous
RL: USES (Uses)
(fillers, for electrically conducting **polymers**)
IT 9003-55-8P, preparation
RL: PREP (Preparation)
(hydroxy-terminated, for urethane **polymers**, fillers for electrically conducting)
IT **13463-67-7**, uses and miscellaneous
RL: USES (Uses)
(fillers, for electrically conducting **polymers**)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



=> D QUE
L43 50 SEA FILE=REGISTRY ABB=ON (11098-99-0/BI OR 11113-67-0/BI OR 11126-15-1/BI OR 12017-97-9/BI OR 12022-46-7/BI OR 12031-65-1/BI OR 12190-79-3/BI OR 12680-08-9/BI OR 131344-56-4/BI OR 1314-13-2/BI OR 1314-35-8/BI OR 1314-62-1/BI OR 1332-29-2/BI OR 13463-67-7/BI OR 13983-17-0/BI OR 146509-31-1/BI OR 152991-98-5/BI OR 153327-00-5/BI OR 159967-11-0/BI OR 177997-13-6/BI OR 178961-04-1/BI OR 182442-95-1/BI OR 24937-79-9/BI OR 249756-67-0/BI OR 249756-68-1/BI OR 249756-69-2/BI OR 249756-70-5/BI OR 3486-35-9/BI OR 37296-91-6/BI OR 37349-20-5/BI OR 37367-96-7/BI OR 39302-37-9/BI OR 39457-42-6/BI OR 51177-06-1/BI OR 51680-57-0/BI OR 56321-19-8/BI OR 61673-68-5/BI OR 61673-71-0/BI OR 67542-73-8/BI OR 71043-01-1/BI OR 74245-06-0/BI OR 7439-93-2/BI OR 76214-28-3/BI OR 7782-42-5/BI OR 80341-49-7/BI OR 9002-84-0/BI OR 9002-88-4/BI OR 9003-07-0/BI OR 9003-53-6/BI OR 96352-80-6/BI)
L44 39 SEA FILE=REGISTRY ABB=ON L43 AND 1-10/M
L45 11 SEA FILE=REGISTRY ABB=ON L43 NOT L44
L46 7 SEA FILE=REGISTRY ABB=ON L45 AND PMS/CI
L47 4 SEA FILE=REGISTRY ABB=ON L45 NOT L46
L48 43 SEA FILE=REGISTRY ABB=ON L44 OR L47
L49 23100 SEA FILE=REGISTRY ABB=ON (LI(L)(CO OR NI OR AL OR MO OR V OR W OR RU OR FE OR CR OR TA OR NB OR TI OR ZR)(L)(O OR S))/ELS

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L50      383189 SEA FILE=HCAPLUS ABB=ON  L48 OR L49
L57      553536 SEA FILE=HCAPLUS ABB=ON  L50 OR (OXIDE# OR ?SILICAT? OR
                ?SULFATE? OR ?CARBONATE? OR ?PHOSPHATE? OR ?NITRIDE?  OR
                ?AMIDE? OR ?IMIDE? OR ?CARBIDE?)(3A)METAL?
L58       26901 SEA FILE=HCAPLUS ABB=ON  L57 AND CELL#
L59         622 SEA FILE=HCAPLUS ABB=ON  L58 AND PARTIC?(3A)SIZE?
L60           5 SEA FILE=HCAPLUS ABB=ON  L59 AND ?POLYMER?(4A)(HEAT? OR IRRAD?
                OR RADIAT? OR UV OR ULTRAVIOLET OR ULTRA(W)VIOLET? OR PHOTOCHEM
                ? OR LIGHT?(3A)CUR?)
L61          22 SEA FILE=HCAPLUS ABB=ON  L59 AND ?POLYMER? AND COMPOSITION?
L62           5 SEA FILE=HCAPLUS ABB=ON  L59 AND (?POLYMER?(5A)CROSSLINK?)
L63          27 SEA FILE=HCAPLUS ABB=ON  (L60 OR L61 OR L62)
L68          21 SEA FILE=HCAPLUS ABB=ON  L63 AND (PLASTIC? OR ELECTROCHEM?)/SC,
                SX
L70          54 SEA FILE=HCAPLUS ABB=ON  L59 AND COMPOSITE?
L71          19 SEA FILE=HCAPLUS ABB=ON  L70 AND ?POLYMER?
L72          18 SEA FILE=HCAPLUS ABB=ON  L71 AND (PLASTIC? OR ELECTROCHEM?)/SC,
                SX
L73          14 SEA FILE=HCAPLUS ABB=ON  (L68 OR L72) NOT L68
```

=> D L73 ALL 1-14 HITSTR

L73 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:595486 HCAPLUS
DN 137:143073
TI Methods for producing electrocatalyst powders for the fabrication of energy devices
IN Hampden-Smith, Mark J.; Kodas, Toivo T.; Atanassov, Plamen; Kunze, Klaus; Napolitanoof, Paul; Bhatia, Rimple; Dericotte, David E.; Atanassova, Paolina
PA USA
SO U.S. Pat. Appl. Publ., 115 pp., Cont.-in-part of U.S. Ser. No. 532,917.
CODEN: USXXCO
DT Patent
LA English
IC ICM H01M004-96
ICS B01J021-18; B01J023-40
NCL 502185000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 67, **72**
FAN.CNT 16

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002107140	A1	20020808	US 2001-815380	20010322
	US 6103393	A	20000815	US 1998-141397	19980827
	WO 2001093999	A2	20011213	WO 2001-US18565	20010608
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 2001069765	A5	20011217	AU 2001-69765	20010608

EP 1309396 A2 20030514 EP 2001-948297 20010608
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
US 2003064265 A1 20030403 US 2002-213001 20020805
PRAI US 1998-141397 A2 19980827
US 2000-532917 A2 20000322
US 1998-28029 B2 19980224
US 1998-28277 A2 19980224
US 1998-30057 A2 19980224
US 2000-589710 A 20000608
US 2001-815380 A 20010322
WO 2001-US18565 W 20010608

AB Electrocatalyst powders and methods for producing electrocatalyst powders, such as carbon **composite** electrocatalyst powders are disclosed. The powders have a well-controlled microstructure and morphol. The method includes forming the particles from an aerosol of precursors by heating the aerosol to a relatively low temp., such as not greater than about 400.degree..

ST battery electrocatalyst powder prepn; fuel **cell** electrocatalyst powder prepn; energy conversion device electrocatalyst powder prepn

IT Air
(carrier gas; methods for producing electrocatalyst powders for fabrication of energy devices)

IT Catalysts
(electrocatalysts; methods for producing electrocatalyst powders for fabrication of energy devices)

IT Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fluorine- and sulfo-contg., ionomers; methods for producing electrocatalyst powders for fabrication of energy devices)

IT Fuel **cell** electrodes
(gas diffusion; methods for producing electrocatalyst powders for fabrication of energy devices)

IT Battery electrodes
Electrodes
(gas-diffusion; methods for producing electrocatalyst powders for fabrication of energy devices)

IT Aerosols
Energy converters
Microstructure
Particle size
Porosity
Sound and Ultrasound
Surface area
Surface structure
Ultrasonic transducers
(methods for producing electrocatalyst powders for fabrication of energy devices)

IT Platinum-group metals
Transition **metal oxides**
RL: CAT (Catalyst use); USES (Uses)
(methods for producing electrocatalyst powders for fabrication of energy devices)

IT Carbon black, uses
Graphitized carbon black
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
(methods for producing electrocatalyst powders for fabrication of

energy devices)

IT **Fluoropolymers**, uses
Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(methods for producing electrocatalyst powders for fabrication of energy devices)

IT **Fluoropolymers**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyoxyalkylene-, sulfo-contg., ionomers; methods for producing electrocatalyst powders for fabrication of energy devices)

IT Ionomers
RL: TEM (Technical or engineered material use); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-contg.; methods for producing electrocatalyst powders for fabrication of energy devices)

IT Drying apparatus
Spraying apparatus
(spray drying app.; methods for producing electrocatalyst powders for fabrication of energy devices)

IT Nozzles
(spray; methods for producing electrocatalyst powders for fabrication of energy devices)

IT 7727-37-9, Nitrogen, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(carrier gas; methods for producing electrocatalyst powders for fabrication of energy devices)

IT 11129-60-5, Manganese oxide
RL: CAT (Catalyst use); USES (Uses)
(methods for producing electrocatalyst powders for fabrication of energy devices)

IT 12017-35-5, Cobalt nickel oxide Co2NiO4
RL: CAT (Catalyst use); FMU (Formation, unclassified); FORM (Formation, nonpreparative); USES (Uses)
(methods for producing electrocatalyst powders for fabrication of energy devices)

IT 7440-22-4, Silver, uses
RL: CAT (Catalyst use); MOA (Modifier or additive use); USES (Uses)
(methods for producing electrocatalyst powders for fabrication of energy devices)

IT 7440-06-4P, Platinum, uses 12613-88-6P 12737-30-3P, Cobalt nickel oxide 12779-05-4P 444718-48-3P 444718-49-4P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(methods for producing electrocatalyst powders for fabrication of energy devices)

IT 7440-44-0, Carbon, uses
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
(methods for producing electrocatalyst powders for fabrication of energy devices)

IT 7722-64-7 10377-66-9, Manganese nitrate 16941-12-1, Hexachloroplatinic acid 20634-12-2 51850-20-5
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(methods for producing electrocatalyst powders for fabrication of energy devices)

IT 9002-84-0, Ptfe
RL: TEM (Technical or engineered material use); USES (Uses)
(methods for producing electrocatalyst powders for fabrication of

energy devices)

L73 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:253126 HCAPLUS
DN 136:265826
TI Method for the preparation of cathode active material for a nonaqueous electrolyte battery
IN Hosoya, Mamoru; Takahashi, Kimio; Fukushima, Yuzuru
PA Sony Corporation, Japan
SO Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM H01M004-58
ICS H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1193784	A2	20020403	EP 2001-122752	20010921
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002110165	A2	20020412	JP 2000-301403	20000929
	US 2002041998	A1	20020411	US 2001-961863	20010924
	CN 1349264	A	20020515	CN 2001-142531	20010929
PRAI	JP 2000-301403	A	20000929		

AB A LiFePO4 carbon **composite** material is to be synthesized in a single phase satisfactorily to achieve superior **cell** characteristics. In prepg. a cathode active material, a starting material for synthesis of a compd. represented by the general formula LixFePO4, where 0<.times..ltoreq.1, is mixed, milled and sintered and a carbon material is added to the resulting mass at an optional time point in the course of mixing, milling and sintering. Li3PO4, Fe3(PO4)2 or its hydrates Fe3(PO4)2.cntdot.nH2O, where n denotes the no. of hydrates, are used as the starting material for synthesis of LixFePO4. The **particle size** distribution of **particles** of the starting material for synthesis following the milling with the **particle size** not less than 3 .mu.m is set to 2.2% or less in terms of the volumetric integration frequency.

ST battery cathode lithium iron phosphate carbon **composite**
IT Secondary batteries
(lithium; method for prepn. of cathode active material for nonaq. electrolyte battery)
IT Battery cathodes
Particle size distribution
(method for prepn. of cathode active material for nonaq. electrolyte battery)
IT Carbon black, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(method for prepn. of cathode active material for nonaq. electrolyte battery)
IT Ball milling
(planetary; method for prepn. of cathode active material for nonaq. electrolyte battery)
IT 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate 9011-17-0, Hexafluoropropylene-vinylidene fluoride **copolymer** 21324-40-3,

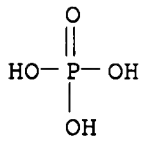
Lithium hexafluorophosphate
RL: DEV (Device component use); USES (Uses)
(method for prepn. of cathode active material for nonaq. electrolyte battery)

IT 7440-44-0, Carbon, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(method for prepn. of cathode active material for nonaq. electrolyte battery)

IT **15365-14-7P**, Iron lithium phosphate FeLiPO4 **198782-39-7P**
, Iron lithium phosphate (FeLi0-1(PO4))
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(method for prepn. of cathode active material for nonaq. electrolyte battery)

IT **15365-14-7P**, Iron lithium phosphate FeLiPO4 **198782-39-7P**
, Iron lithium phosphate (FeLi0-1(PO4))
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(method for prepn. of cathode active material for nonaq. electrolyte battery)

RN 15365-14-7 HCAPLUS
CN Phosphoric acid, iron(2+) lithium salt (1:1:1) (9CI) (CA INDEX NAME)



● Fe(II)

● Li

RN 198782-39-7 HCAPLUS
CN Iron lithium phosphate (FeLi0-1(PO4)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Li	0 - 1	7439-93-2
Fe	1	7439-89-6

L73 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:90423 HCAPLUS
DN 136:137420
TI Conductive **composite** material and electrodes for fuel **cells** using the **composite** formed by thermo-compression
IN Baurens, Pierre; Bourgeoisat, Eric; Jousse, Franck; Salas, Jean-Felix

PA Commissariat a l'Energie Atomique, Fr.
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA French
IC ICM H01M008-02
ICS H01M004-96; H01B001-24
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002009219	A1	20020131	WO 2001-FR2392	20010723
	W: CA, JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	FR 2812119	A1	20020125	FR 2000-9666	20000724
	FR 2812119	B1	20021213		
	EP 1303885	A1	20030423	EP 2001-958157	20010723
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
PRAI	FR 2000-9666	A	20000724		
	WO 2001-FR2392	W	20010723		

AB The invention concerns a conductive **composite** material consisting of a high pressure sintered mixt. of flake graphite and a thermoplastic **polymer** powder for making a fuel **cell** electrode. The mixt. comprises a 1st type of flake graphite with a **particle size** distribution between 10 and 100 .mu.m and/or a 2nd type of flake graphite consisting of agglomerates of graphite particles mutually joined and superimposed so that their main planes are mutually parallel; the agglomerates have a planar anisotropy and have between 10 .mu.m and 1 mm sidewise and 5-50 .mu.m in thickness. The mixt. further comprises a thermoplastic **polymer** powder with a **particle size** distribution between 10 and 200 .mu.m, the flakes and/or agglomerates having their main planes mutually parallel.

ST conductive **composite** fuel **cell** electrode; graphite thermoplastic **polymer composite** fuel **cell** electrode

IT **Fluoropolymers**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(binder in manuf. of conductive **composite** material for fuel **cell** electrodes)

IT Fuel **cell** electrodes
(conductive **composite** material contg. graphite and thermoplastic **polymer** for)

IT **Composites**
(conductive **composite** material for fuel **cell** electrodes)

IT Plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(thermoplastics; binder in manuf. of conductive **composite** material for fuel **cell** electrodes)

IT 24937-79-9, PVDF
RL: TEM (Technical or engineered material use); USES (Uses)
(binder in manuf. of conductive **composite** material for fuel **cell** electrodes)

IT **7782-42-5**, Graphite, uses
RL: TEM (Technical or engineered material use); USES (Uses)

(in manuf. of conductive **composite** material for fuel **cell** electrodes)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Advanced Ceramics Corp; EP 0805463 A 1997 HCAPLUS
(2) Chung, D; US 4704231 A 1987 HCAPLUS
(3) Electric Power Res Inst; EP 0268397 A 1988 HCAPLUS
(4) Her Majesty The Queen As Repre; EP 0415733 A 1991 HCAPLUS
(5) Nisshin Spinning; EP 0935303 A 1999 HCAPLUS
(6) Sgl Technik Gmbh; EP 0774337 A 1997
(7) Tsukagoshi, T; US 4366205 A 1982 HCAPLUS
IT **7782-42-5**, Graphite, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(in manuf. of conductive **composite** material for fuel **cell** electrodes)
RN 7782-42-5 HCAPLUS
CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

L73 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:396772 HCAPLUS
DN 135:7524
TI Production of graphite powder with an increased bulk density
IN Spahr, Michael; Cattaneo, Davide; Streb, Klaus
PA Timcal Ag, Switz.
SO PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DT Patent
LA German
IC ICM C01B031-04
ICS C04B035-626; H01B001-24; C09C001-46; C08K003-04; H01M004-02; H01M008-02; C04B035-52
CC 49-1 (Industrial Inorganic Chemicals)
Section cross-reference(s): **37**, **52**, 56
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001038220	A1	20010531	WO 2000-CH514	20000922
	W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1240103	A1	20020918	EP 2000-960268	20000922
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
	JP 2003514753	T2	20030422	JP 2001-539784	20000922
PRAI	CH 1999-2165	A	19991126		
	WO 2000-CH514	W	20000922		

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

AB The invention relates to a method for increasing the Scott d. of synthetic and/or natural graphite powders of any **particle size** distribution, preferably of highly-pure graphite, by subjecting the graphite powder to an autogenous surface treatment. The powder is used, in particular, for producing dispersions, coatings with an increased graphite/binder ratio and increased elec. and thermal cond., gas and liq.-tight coatings on metal substrates, thermoplastic or duroplastic graphite-**polymer composites**, or for producing metallic, non-ferrous sintering materials.

ST graphite powder high bulk density prodn

IT Powder metallurgy
(nonferrous; prodn. of graphite powder with increased bulk d. for)

IT Battery anodes
Coating materials
Composites
Disperse systems
Fuel **cell** electrolytes
Pigments, nonbiological
(prodn. of graphite powder with increased bulk d. for)

IT **7782-42-5P**, Graphite, preparation
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)
(prodn. of graphite powder with increased bulk d.)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; PATENT ABSTRACTS OF JAPAN 1990, V014(275), PC-0728
(2) Anon; PATENT ABSTRACTS OF JAPAN 1996, V1996(12)
(3) Anon; PATENT ABSTRACTS OF JAPAN 1997, V1997(03)
(4) Feofanov, N; RU 2049552 C 1995
(5) Kansai Coke &Amp; JP 08213020 A 1996 HCAPLUS
(6) Kansai Coke &Amp Chem Co Ltd; JP 08298117 A 1996 HCAPLUS
(7) Kansai Netsukagaku Kabushiki Kaisha; CA 2246953 A 1999 HCAPLUS
(8) Nippon Kasei Kk; JP 06100727 A 1994 HCAPLUS
(9) Tokai Carbon Co Ltd; JP 02083205 A 1990 HCAPLUS
(10) Wang, H; J POWER SOURCES; JOURNAL OF POWER SOURCES 1999, V83(1), P141

IT **7782-42-5P**, Graphite, preparation
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)
(prodn. of graphite powder with increased bulk d.)

RN 7782-42-5 HCAPLUS

CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

L73 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:377191 HCAPLUS

DN 134:355504

TI Separators for solid **polymer** electrolyte fuel **cells**

IN Tani, Taiyo; Matsuoka, Takeshi

PA Tokai Carbon Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01M008-02

ICS H01M008-10
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001143721	A2	20010525	JP 1999-327839	19991118
PRAI	JP 1999-327839		19991118		

AB The grooved separators are molded mixts. contg. 15-40% thermosetting resin and 60-85% C powder, having av. particle diam. .ltoreq.50 .mu.m and max. particle diam. .ltoreq.300 .mu.m, and contg. .ltoreq.20% particles with diam. .ltoreq.10 .mu.m; and have plate thickness 1-5 mm, groove thickness 10-50% that of the plate thickness, sp. resistance .ltoreq.2.times.10-2 .OMEGA..cm in their thickness direction, gas permeability .ltoreq.10-5 cm3/cm2.min, room temp. bending strength >300 kg/cm2, and retaining .gtoreq.90% the strength at 100.degree..
ST **polymer** electrolyte fuel **cell** thermosetting carbon separator; fuel **cell** thermosetting resin carbon separator
IT Permeability
(gas; specifications for thermosetting resin-carbon **composite** separators for **polymer** electrolyte fuel **cells**)
IT Bending strength
Electric resistance
(specifications for thermosetting resin-carbon **composite** separators for **polymer** electrolyte fuel **cells**)
IT Phenolic resins, uses
RL: DEV (Device component use); USES (Uses)
(specifications for thermosetting resin-carbon **composite** separators for **polymer** electrolyte fuel **cells**)
IT **7782-42-5**, Graphite, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(controlled **particle size** of graphite in thermosetting resin-carbon separators for **polymer** electrolyte fuel **cells**)
IT **7782-42-5**, Graphite, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(controlled **particle size** of graphite in thermosetting resin-carbon separators for **polymer** electrolyte fuel **cells**)
RN 7782-42-5 HCAPLUS
CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

L73 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:269289 HCAPLUS
DN 134:299680
TI Manufacture of carbon **composites** having small gas permeability for solid **polymer**-type fuel **cell** separator plates
IN Kawamata, Hiroshi; Takahashi, Kunimasa
PA Mitsubishi Chemical Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese

IC ICM C04B035-52
ICS C01B031-02
CC 57-8 (Ceramics)
Section cross-reference(s): **52**
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001106575	A2	20010417	JP 1999-288814	19991008
PRAI JP 1999-288814		19991008		

AB The process comprises: drying mixing C compd. **particles** (av. **size** .ltoreq.10 .mu.m) and graphite-type C **particles** (av. **size** 10-70 .mu.m), adding and adhesive aq. soln., granulating to have av. sie 0.5-20 mm, press molding, and heating in an non-oxidizing atm.
ST carbon **composite** solid **polymer** fuel **cell** separator plate
IT **Composites**
Fuel **cell** separators
(manuf. of carbon **composites** having small gas permeability for solid **polymer**-type fuel **cell** separator plates)
IT **7782-42-5**, Graphite, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(for manuf. of carbon **composites** having small gas permeability for solid **polymer**-type fuel **cell** separator plates)
IT 7440-44-0, Carbon, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of carbon **composites** having small gas permeability for solid **polymer**-type fuel **cell** separator plates)
IT **7782-42-5**, Graphite, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(for manuf. of carbon **composites** having small gas permeability for solid **polymer**-type fuel **cell** separator plates)
RN 7782-42-5 HCAPLUS
CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

L73 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:89083 HCAPLUS
DN 134:150006
TI High thermal conductivity negative electrode material for lithium-ion batteries
AU Maleki, H.; Selman, J. R.; Dinwiddie, R. B.; Wang, H.
CS Motorola Energy System Group (ESG), Lawrenceville, GA, 30043, USA
SO Journal of Power Sources (2001), 94(1), 26-35
CODEN: JPSODZ; ISSN: 0378-7753
PB Elsevier Science S.A.
DT Journal
LA English

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

AB Exptl. thermophys. property data for **composites** of electrode and electrolyte materials are needed in order to provide better bases to model and/or design high thermal cond. Li-ion **cells**. In this study, thermal cond. (k) values are detd. for neg. electrode (NE) materials made of synthetic graphite of various **particle sizes**, with varying polyvinylidene difluoride (PVDF) binder and carbon-black (C-Black) contents, using various levels of compression pressure. Expts. were conducted at room temp. (RT), 150 and 200.degree.. Requirements for designing a high thermal cond. NE-material are suggested. Detailed statistical data anal. shows that the thermal cond. of the NE-material most strongly depends on compression pressure, followed by graphite **particle size**, C-Black content and finally PVDF content. The max. k-value was achieved for the samples made of the largest graphite particles (75 .mu.m), the smallest C-Black content (5 wt.%) and the highest compression pressure (566 kg cm-2). Increasing the PVDF content from 10-15 wt.% increased the k-values by 11-13% only. The k-values of all samples decreased with increasing temp.; at 200.degree., the k-values were close to each other irresp. of prepn. procedure and/or raw material contents. This most likely is due to the relaxation of contact pressure among the graphite particles because of PVDF melting at 155-160.degree..

ST thermal cond neg electrode material lithium ion battery; graphite neg electrode lithium ion battery thermal cond; polyvinylidene difluoride neg electrode lithium ion battery thermal cond; carbon black neg electrode lithium ion battery thermal cond

IT Battery anodes
Thermal conductivity
(high thermal cond. neg. electrode material for lithium-ion batteries)

IT Carbon black, uses
Fluoropolymers, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(high thermal cond. neg. electrode material for lithium-ion batteries)

IT **7782-42-5**, Graphite, uses 24937-79-9, Polyvinylidene difluoride
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(high thermal cond. neg. electrode material for lithium-ion batteries)

RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD

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IT **7782-42-5**, Graphite, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(high thermal cond. neg. electrode material for lithium-ion batteries)
RN 7782-42-5 HCAPLUS
CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

L73 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:58444 HCAPLUS
DN 134:119632
TI Manufacture of molded carbon-graphite **composites** with complex shapes
IN Kawamata, Hiroshi; Takahashi, Kunimasa
PA Mitsubishi Chemical Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C04B035-52
ICS C10B055-00; C10C003-00; C01B031-04; H01M008-02
CC 57-8 (Ceramics)
Section cross-reference(s): 51, **52**

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001019547	A2	20010123	JP 1999-182289	19990628
PRAI JP 1999-182289		19990628		

AB The molded **composites** are manufd. by kneading heavy compns. (.gamma. components, i.e., quinoline-sol. toluene-insol. components, <5%) contg. self-sintering components selected from coal-based tar, petroleum-based tar, coal-based pitch, and petroleum-based pitch with natural graphite and/or synthetic graphite having av. **particle**

size 10-70 .mu.m for covering the graphite particles with the heavy compns., pulverizing the resulting **composites** (which are solid at room temp.), granulating them, press-forming the granules (diam. .ltoreq.0.5 mm), mech. processing them, and carbonizing them. The jigs used in pulverizing and mech. processing, and the **composites** around the jigs are cooled to a temp. where the heavy compns. do not melt during pulverizing and mech. processing. The molded **composites** show good flexural strength, elec. cond., and gas permeability required for fuel **cell** separators.

ST carbon graphite **composite** fuel **cell** separator; coal petroleum carbon graphite **composite** molding

IT Polyoxyalkylenes, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(binder in granulation; manuf. of molded C-graphite **composites** with complex shapes for fuel **cell** separators)

IT **Polymers**, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(coagulants, binders in granulation; manuf. of molded C-graphite **composites** with complex shapes for fuel **cell** separators)

IT Binders
Coal tar pitch
Composites
Fuel **cell** separators
Petroleum pitch
(manuf. of molded C-graphite **composites** with complex shapes for fuel **cell** separators)

IT Coal tar
Petroleum tar
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of molded C-graphite **composites** with complex shapes for fuel **cell** separators)

IT Coagulants
(**polymers**, binders in granulation; manuf. of molded C-graphite **composites** with complex shapes for fuel **cell** separators)

IT Molding
(press; manuf. of molded C-graphite **composites** with complex shapes for fuel **cell** separators)

IT Carbonization
(under nonoxidizing atm.; manuf. of molded C-graphite **composites** with complex shapes for fuel **cell** separators)

IT 57-50-1, Sucrose, processes 9004-67-5, Methyl cellulose 25322-68-3, Polyethylene glycol
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(binder in granulation; manuf. of molded C-graphite **composites** with complex shapes for fuel **cell** separators)

IT **7782-42-5**, CPB, processes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(flakes; manuf. of molded C-graphite **composites** with complex shapes for fuel **cell** separators)

IT 7440-44-0, Carbon, processes

RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of molded C-graphite **composites** with complex shapes for fuel **cell** separators)

IT **7782-42-5**, CPB, processes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(flakes; manuf. of molded C-graphite **composites** with complex shapes for fuel **cell** separators)

RN 7782-42-5 HCAPLUS
CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

L73 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:817413 HCAPLUS
DN 133:365422
TI Manufacture of carbon-graphite **composite** molded body having high bending strength and electric conductivity
IN Kawamata, Hiroshi; Takahashi, Kunimasa
PA Mitsubishi Chemical Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C04B035-52
ICS H01M008-02
CC 57-8 (Ceramics)
Section cross-reference(s): **38**, **52**, 76
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2000319068	A2	20001121	JP 1999-124193	19990430
PRAI JP 1999-124193		19990430		

AB The molded body is manufd. by: dehydration-drying graphite **particles** (**size** 10-70 .mu.m) and a C compd. **particles** (av. **size** .ltoreq.10 .mu.m) which is self-sinterable during carbonization, mixing under stirring, granulating to max. **particle size** .ltoreq.0.5 mm, molding, and carbonizing under non-oxidized atm. The molded body is esp. suitable for solid **polymer** mold and phosphate-type fuel **cell** separator plate.

ST carbon graphite **composite** solid **polymer** mold; fuel **cell** separator carbon graphite **composite**

IT Sugarcane
(binder; for manuf. of carbon-graphite **composite** molded body having high bending strength and elec. cond.)

IT Polyoxyalkylenes, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(binder; for manuf. of carbon-graphite **composite** molded body having high bending strength and elec. cond.)

IT **Composites**
(manuf. of carbon-graphite **composite** molded body having high bending strength and elec. cond.)

IT Fuel **cell** separators
(manuf. of carbon-graphite **composite** molded body having high bending strength and elec. cond. for)
IT Molds (forms)
(solid **polymer** mold; manuf. of carbon-graphite **composite** molded body having high bending strength and elec. cond. for)
IT 9004-67-5, Methyl cellulose 25322-68-3, Polyethylene glycol
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(binder; for manuf. of carbon-graphite **composite** molded body having high bending strength and elec. cond.)
IT 7440-44-0, Carbon, processes **7782-42-5**, Graphite, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of carbon-graphite **composite** molded body having high bending strength and elec. cond.)
IT 25791-96-2, GP 3000
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(raw material contg.; for manuf. of carbon-graphite **composite** molded body having high bending strength and elec. cond.)
IT **7782-42-5**, Graphite, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of carbon-graphite **composite** molded body having high bending strength and elec. cond.)
RN 7782-42-5 HCAPLUS
CN Graphite (8CI, 9CI) (CA INDEX NAME)

C

L73 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:486845 HCAPLUS
DN 133:153107
TI Lithium insertion into Sn- and SnSbx-based **composite** electrodes in solid **polymer** electrolytes
AU Yang, J.; Takeda, Y.; Li, Q.; Imanishi, N.; Yamamoto, O.
CS Faculty of Engineering, Department of Chemistry, Mie University, Tsu, Mie, 514-8507, Japan
SO Journal of Power Sources (2000), 90(1), 64-69
CODEN: JPSODZ; ISSN: 0378-7753
PB Elsevier Science S.A.
DT Journal
LA English
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): **38**, 56
AB Lithium insertion into Sn and SnSbx metallic hosts and the subsequent cycling behavior in PEO-based **polymer** electrolytes are examd. Inserted lithium can hardly be extd. from the electrode constituted by coarse tin powder due to the elec. isolation after dramatic host vol. changes. Decreasing the host **particle size** and using

intermetallic SnSbx alloy powders greatly enhance the electrode Li extn. capacity and its retention on cycling. The high irreversible capacity in the first cycle linked to the use of ultrafine host powders is compensated by introducing a certain amt. of Li2.6Co0.4N into the electrode. Some factors influencing the **cell** performance are presented and discussed.

ST lithium battery tin antimony based **composite** anode

IT Intercalation
(electrochem.; lithium insertion into Sn- and SnSbx-based **composite** electrodes in solid **polymer** electrolytes)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(lithium complex; lithium insertion into Sn- and SnSbx-based **composite** electrodes in solid **polymer** electrolytes)

IT Battery anodes
Battery electrolytes
(lithium insertion into Sn- and SnSbx-based **composite** electrodes in solid **polymer** electrolytes)

IT Secondary batteries
(lithium; lithium insertion into Sn- and SnSbx-based **composite** electrodes in solid **polymer** electrolytes)

IT **7439-93-2D**, Lithium, polyethylene oxide complex, uses 7440-31-5, Tin, uses 25322-68-3D, Peo, lithium complex 33454-82-9D, Lithium triflate, polyethylene oxide complex 37233-34-4 37258-24-5, Antimony 50, tin 50 atomic 90076-65-6D, polyethylene oxide complex 114813-96-6
RL: DEV (Device component use); USES (Uses)
(lithium insertion into Sn- and SnSbx-based **composite** electrodes in solid **polymer** electrolytes)

IT 174421-80-8, Cobalt lithium nitride Co0.4Li2.6N
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(lithium insertion into Sn- and SnSbx-based **composite** electrodes in solid **polymer** electrolytes)

IT **7439-93-2**, Lithium, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(lithium insertion into Sn- and SnSbx-based **composite** electrodes in solid **polymer** electrolytes)

IT 7440-02-0, Nickel, uses 9002-88-4, Polyethylene
RL: MOA (Modifier or additive use); USES (Uses)
(lithium insertion into Sn- and SnSbx-based **composite** electrodes in solid **polymer** electrolytes)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

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IT **7439-93-2D**, Lithium, polyethylene oxide complex, uses

RL: DEV (Device component use); USES (Uses)
(lithium insertion into Sn- and SnSbx-based **composite** electrodes in solid **polymer** electrolytes)
RN 7439-93-2 HCAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

IT **7439-93-2**, Lithium, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(lithium insertion into Sn- and SnSbx-based **composite** electrodes in solid **polymer** electrolytes)
RN 7439-93-2 HCAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

L73 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 1997:215201 HCAPLUS
DN 127:20808
TI Electrochemical properties of LixMn2O4 **composite** electrode in **cells** based on glass-**polymer composite** electrolytes
AU Cho, Jaephil; Guan, Jie; Liu, Meilin
CS School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA, USA
SO Solid State Ionics (1997), 95(3,4), 289-294
CODEN: SSIOD3; ISSN: 0167-2738
PB Elsevier
DT Journal
LA English
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
AB Electrochem. behavior of LixMn2O4 powders, prepd. using different synthesis approaches, have been studied using LixC6/LixMn2O4 **cells** based on glass-**polymer composite** electrolytes. Results indicate that the LixMn2O4 powders prepd. by a xerogel technique have much smaller **particle size**, larger capacity utilization and less capacity fading during cycling in comparison to the powders prepd. by solid state reactions. The electrochem. behavior of a **composite** pos. electrode based on LixMn2O4 is influenced not only by the microstructure of the LixMn2O4 powders but also by the vol. fractions of other constituent phases.
ST battery lithium manganese oxide **composite** electrode
IT Battery cathodes
Battery electrolytes
(electrochem. properties of LixMn2O4 **composite** electrode in **cells** based on glass-**polymer composite** electrolytes)
IT Iodide glasses
Sulfide glasses
RL: DEV (Device component use); USES (Uses)

(electrochem. properties of LixMn2O4 **composite** electrode in **cells** based on glass-**polymer composite** electrolytes)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(lithium complex; electrochem. properties of LixMn2O4 **composite** electrode in **cells** based on glass-**polymer composite** electrolytes)

IT Secondary batteries
(lithium, LixC6/LixMn2O4; electrochem. properties of LixMn2O4 **composite** electrode in **cells** based on glass-**polymer composite** electrolytes)

IT **7439-93-2D**, Lithium, PEO complex, uses 25322-68-3D, Peo, lithium complex 39448-96-9, Lithium-graphite **39457-42-6**, Lithium manganese oxide 90076-65-6
RL: DEV (Device component use); USES (Uses)
(electrochem. properties of LixMn2O4 **composite** electrode in **cells** based on glass-**polymer composite** electrolytes)

IT 10377-51-2, Lithium iodide 12007-33-9, Boron sulfide b2s3 12136-58-2, Lithium sulfide
RL: DEV (Device component use); USES (Uses)
(glass; electrochem. properties of LixMn2O4 **composite** electrode in **cells** based on glass-**polymer composite** electrolytes)

IT **7439-93-2D**, Lithium, PEO complex, uses **39457-42-6**, Lithium manganese oxide
RL: DEV (Device component use); USES (Uses)
(electrochem. properties of LixMn2O4 **composite** electrode in **cells** based on glass-**polymer composite** electrolytes)

RN 7439-93-2 HCAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

RN 39457-42-6 HCAPLUS
CN Lithium manganese oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Mn	x	7439-96-5
Li	x	7439-93-2

L73 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 1994:168714 HCAPLUS
DN 120:168714
TI **Composite** solid electrolyte for Li battery applications
AU Nagasubramanian, G.; Peled, E.; Attia, A. I.; Halpert, G.
CS Jet Propul. Lab., California Inst. Technol., Pasadena, CA, 91109, USA
SO Proceedings - Electrochemical Society (1993), 93-24(Proceeding of the Symposium on Lithium Batteries, 1992), 86-97
CODEN: PESODO; ISSN: 0161-6374

DT Journal
LA English
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): **72**, 76
AB The electrochem., bulk and interfacial properties of the polyethylene oxide(PEO) based **polymer composite** electrolyte comprising LiI, PEO, and Al2O3 have been evaluated for Li battery applications. While the bulk cond. is around 10-4(mho cm-1) at 103.degree.C, the Li ion transport seems to be close to unity at the same temp. Compared to the PEO electrolyte this **polymer composite** electrolyte seems to exhibit robust mech. and interfacial properties. The authors have studied three different films with three different alumina sizes in the range 0.01 - 0.3 .mu.. Effects of Al2O3 **particle size** on the electrochem. performance of **polymer composite** electrolyte will be discussed. With TiS2 as cathode a 10 mAh small capacity **cell** was charged and discharged at C/40 and C/20 rates resp.
ST lithium battery **composite** solid electrolyte; PEO lithium iodide aluminum oxide electrolyte; elec cond polyethylene oxide electrolyte
IT Electric conductivity and conduction
(of battery electrolyte consisting of polyethylene oxide with lithium iodide and aluminum oxide)
IT Battery electrolytes
(polyethylene oxide with lithium iodide and aluminum oxide)
IT **7439-93-2D**, Lithium, PEO complex 25322-68-3D, Polyethylene oxide, lithium complex
RL: USES (Uses)
(battery electrolyte contg. aluminum oxide and, elec. cond. of)
IT 12039-13-3, Titanium disulfide
RL: USES (Uses)
(cathode, in lithium battery, with electrolyte of polyethylene oxide with lithium iodide and aluminum oxide)
IT 25322-68-3, Polyethylene oxide
RL: USES (Uses)
(**composite** solid electrolyte contg. lithium iodide and aluminum oxide and, for lithium battery)
IT 1344-28-1, Aluminum sesquioxide, uses
RL: USES (Uses)
(**composite** solid electrolyte contg. lithium iodide and polyethylene oxide and, for lithium battery)
IT 10377-51-2, Lithium iodide
RL: USES (Uses)
(**composite** solid electrolyte contg. polyethylene oxide and aluminum oxide and, for lithium battery)
IT 17341-24-1, Lithium ion(1+), properties
RL: PRP (Properties)
(transport of, in solid electrolyte contg. polyethylene oxide and lithium iodide and aluminum oxide)
IT **7439-93-2D**, Lithium, PEO complex
RL: USES (Uses)
(battery electrolyte contg. aluminum oxide and, elec. cond. of)
RN 7439-93-2 HCAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

L73 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 1994:81462 HCAPLUS
DN 120:81462
TI **Composite** solid electrolyte for Li battery applications
AU Nagasubramanian, G.; Attia, A. I.; Halpert, G.; Peled, E.
CS Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, 91109, USA
SO Solid State Ionics (1993), 67(1-2), 51-6
CODEN: SSIOD3; ISSN: 0167-2738
DT Journal
LA English
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): **38**
AB The electrochem., bulk and interfacial properties of the PEO-based **composite** solid electrolyte (CSE) comprising LiI, PEO, and Al2O3 have been evaluated for Li battery applications. The bulk interfacial and transport properties of the CSEs seem to strongly depend on the alumina **particle size**. For the CSE films, with 0.05 .mu.m alumina, while the bulk cond. is .apprx.10-4 (mho/cm) at 103.degree., the Li ion transport no. seems to be close to unity at the same temp. Compared to the PEO electrolyte, this **polymer composite** electrolyte seems to exhibit robust mech. and interfacial properties. The authors have studied three different films with three different alumina sizes of 0.01-0.3 .mu.m. Effects of Al2O3 **particle size** on the electrochem. performance of **polymer composite** electrolyte will be discussed. With TiS2 as cathode a 10 mA-h small capacity **cell** was charged and discharged at C/40 and C/20 rates, resp.
ST lithium battery **polymer** electrolyte; PEO lithium iodide alumina electrolyte battery
IT Battery electrolytes
(PEO-lithium iodide-alumina **composite**, electrochem. and bulk and interfacial properties of)
IT Electric conductivity and conduction
(of PEO-lithium iodide-alumina **composite** electrolyte for lithium battery applications)
IT Diffusion
(of lithium, in titanium sulfide cathode, lithium-**polymer** electrolyte battery performance in relation to)
IT **7439-93-2D**, Lithium, poly(ethylene oxide) complexes 25322-68-3D, PEO, lithium complexes
RL: USES (Uses)
(alumina **composite**, electrolyte, electrochem. and bulk and interfacial properties of, for lithium battery)
IT 10377-51-2, Lithium iodide
RL: USES (Uses)
(**composite** electrolyte with PEO and alumina and, electrochem. and bulk and interfacial properties of, for lithium battery)
IT 1344-28-1, Alumina, uses
RL: USES (Uses)
(**composite** electrolyte with PEO and lithium iodide and, electrochem. and bulk and interfacial properties of, for lithium battery)
IT **7439-93-2**, Lithium, properties
RL: PEP (Physical, engineering or chemical process); PROC (Process)

(diffusion of, in titanium sulfide cathode, lithium-**polymer** electrolyte battery performance in relation to)

IT **7439-93-2D**, Lithium, poly(ethylene oxide) complexes
RL: USES (Uses)
(alumina **composite**, electrolyte, electrochem. and bulk and interfacial properties of, for lithium battery)
RN 7439-93-2 HCAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

IT **7439-93-2**, Lithium, properties
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(diffusion of, in titanium sulfide cathode, lithium-**polymer** electrolyte battery performance in relation to)
RN 7439-93-2 HCAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

L73 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2003 ACS
AN 1986:516143 HCAPLUS
DN 105:116143
TI Non-organic/**polymer** fiber **composite** and its use including a dimensionally stable separator
IN Hruska, Louis W.; Brown, Carl W., Jr.; Graham, Christopher E.
PA Eltech Systems Corp., USA
SO PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM D01D005-00
ICS D01F001-10; H01M002-16; C25B013-04
CC 38-3 (**Plastics** Fabrication and Uses)
Section cross-reference(s): **72**

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8601841	A1	19860327	WO 1985-US1781	19850916
	W: AU, BR, JP, NO, SU				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
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	ZA 8506924	A	19860528	ZA 1985-6924	19850910
	AU 8548078	A1	19860408	AU 1985-48078	19850916
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	R: BE, DE, FR, GB, IT, NL, SE				
	BR 8506925	A	19861223	BR 1985-6925	19850916
	JP 62500250	T2	19870129	JP 1985-504140	19850916
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	WO 1985-US1781		19850916		
	US 1987-93469		19870908		

AB The title **composites**, useful as diaphragms in electrolytic **cells**, consist of org. **polymer** fibers bonded firmly to finely divided, inorg., refractory particles, are anisotropic, and have nonuniform morphologies. Thus, a mixt. of 60% aq. dispersion of PTFE (**particle size** 0.05-0.5 .mu.) 110, ZrO2 (**particle size** <44 .mu.) 150, and NaCl 800 g was ball-milled at 140.degree. for 1 h (with venting of H2O for the 1st 10 min) to give irregular, anisotropic, hydrophilic fibers with length .apprx.10,000 .mu., diam. .apprx.20 .mu., and bulk d. 4-5. In electrolysis of brine at 2.87 V (1 A/in.2), a diaphragm of this **composite** gave current efficiency 91.0%, power consumption 2113 kW-h/ton NaOH, and brine head 1.9 in.

ST fiber **composite polymer** refractory; zirconium dioxide **composite** fiber; PTFE **composite** fiber; diaphragm electrolysis **composite** fiber

IT Synthetic fibers
RL: USES (Uses)
(**composite**, from **fluoropolymers** and powd. refractories)

IT Carbon fibers
RL: USES (Uses)
(**composites** with fluorocarbon fibers, for diaphragms for electrolysis)

IT Electrolytic **cells**
(diaphragms for, **fluoropolymer**-refractory particle **composite** fibers for manuf. of)

IT Gaskets
(**fluoropolymer**-refractory particle **composite** fibers for manuf. of)

IT Refractories
RL: USES (Uses)
(fibers, **composites** with fluorocarbon, for diaphragms for electrolysis)

IT 1314-23-4, uses and miscellaneous 1344-28-1, uses and miscellaneous 10043-11-5, uses and miscellaneous 12069-32-8 14807-96-6, uses and miscellaneous
RL: USES (Uses)
(**composites** with fluorocarbon fibers, for diaphragms for electrolysis)

IT 7647-14-5, uses and miscellaneous **7782-42-5**, uses and miscellaneous 12013-47-7
RL: USES (Uses)

(fiber-forming agent, in **fluoropolymer**-refractory **composite** fiber manuf.)

IT 9002-83-9 9002-84-0 24937-79-9 24981-14-4 25067-11-2 25101-45-5
RL: USES (Uses)
(fibers, **composites** with refractory particles, for diaphragms for electrolysis)

IT **7782-42-5**, uses and miscellaneous
RL: USES (Uses)
(fiber-forming agent, in **fluoropolymer**-refractory **composite** fiber manuf.)

RN 7782-42-5 HCAPLUS
CN Graphite (8CI, 9CI) (CA INDEX NAME)

C